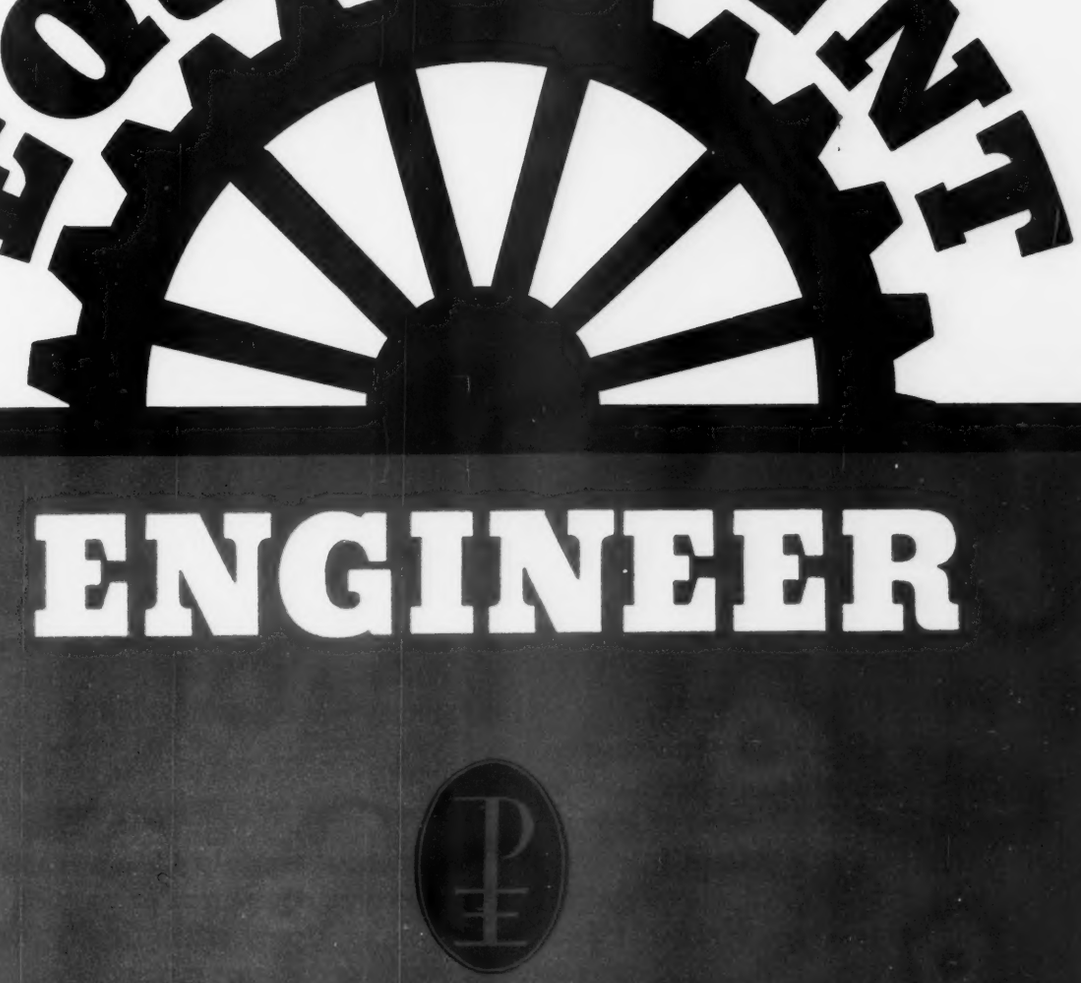
PRINTING EQUIPMENT ENGINEER



AUGUST · 1936

TECHNICAL PUBLICATION FOR PRODUCTION AND
MECHANICAL EXECUTIVES IN THE GRAPHIC ARTS INDUSTRY

A PRESS IS NO FASTER THAN ITS FOLDER!

Goss Rotary Delivery Folder Does Not Limit Speed of the Goss . . . Anti-Friction Press!

● High speed in a press means nothing if the folder can't keep pace . . . if it chews up the paper—misses—spaces unevenly—chokes or clogs.

The Goss Heavy Duty Folder will easily deliver 50,000 to 60,000 complete papers per hour, *folded edge forward!* Even at this high rate of production, light or heavy products are laid down smoothly . . . no "dog eared" copies . . . no clogging, jamming or choking of delivery.

The Goss Folder is of anti-friction construction, equipped with the improved knee-action five fan fly rotary delivery principle. The knee of the fan blades forces the air from between the products, assuring even spacing and accurate count.

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GOSS FOSTER Ltd. - London, England

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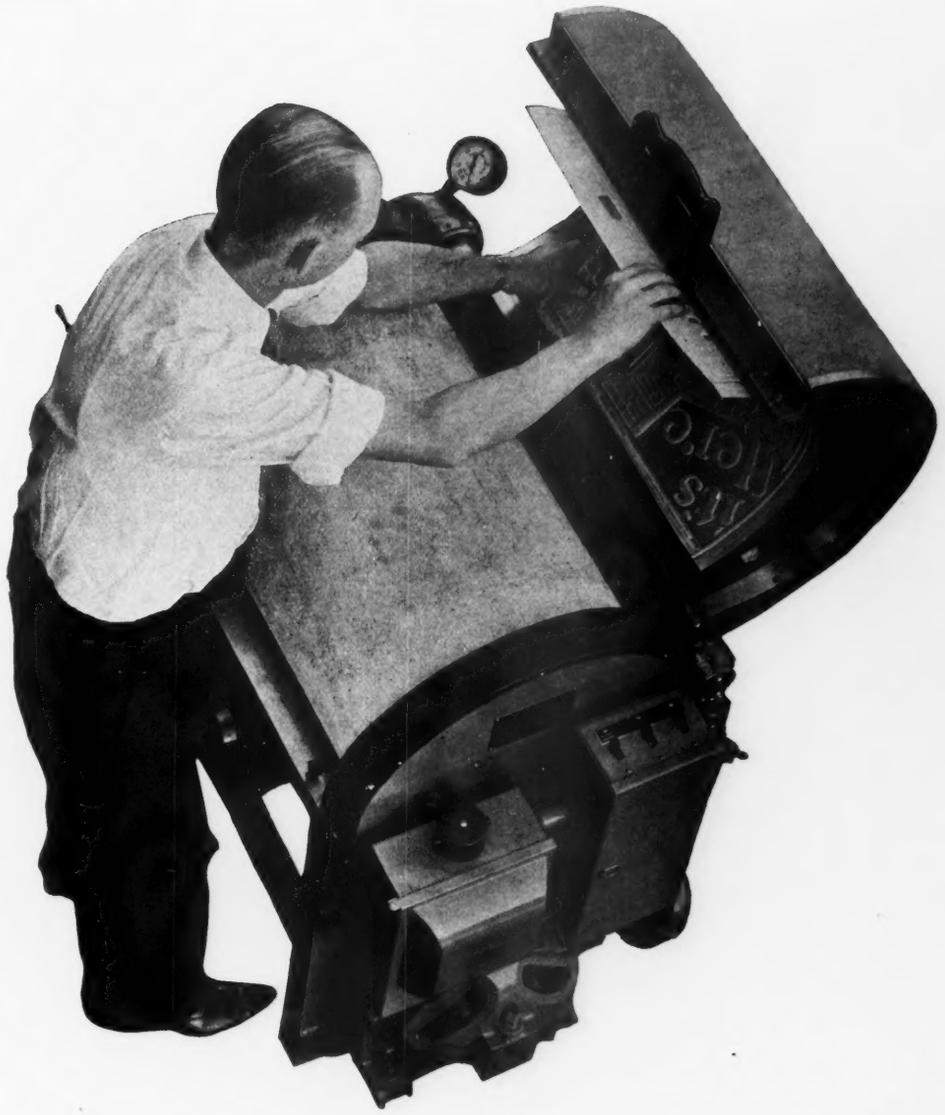

When a dry-mat is placed in **The Autoformer**—you may be assured of its reliability—you can depend on it. When you remove this mat—the Casting Face is Uniform and you can depend on **Uniformity of Plate Printing Levels,** which are accurate. In one minute or less **The Autoformer** delivers the mat—for casting—effecting speed. Compare this routine with "primitive" scorcher routine—**You Can Tell The Difference.**

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A complete line, including felt and non-felt blankets, E. D. blankets, draw sheets, and underpackings. A large percentage of all the newspapers in the country are now using Vulcan cylinder packings.

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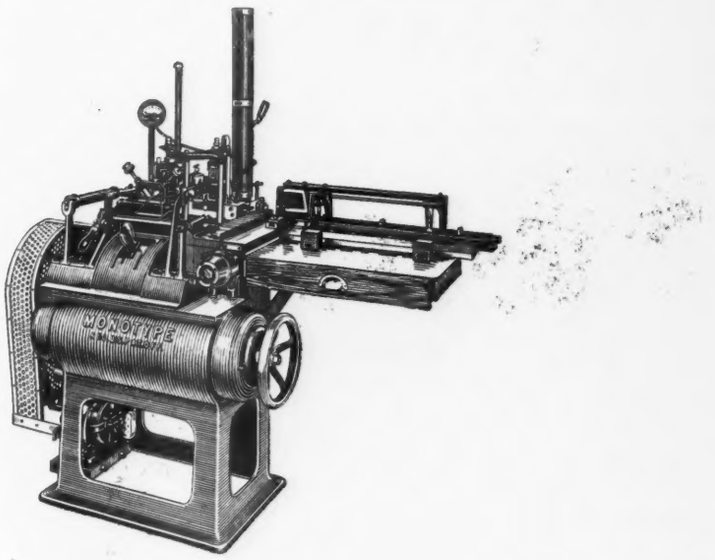
THE "CLASS"

OF ALL MACHINES TO MAKE STRIP-MATERIAL



THE MONOTYPE
MATERIAL MAKING MACHINE

The use of type is such an important factor in producing newspaper pages that the part played by spacing and base-mounting material is often overlooked. No daily newspaper can possibly get out editions on time, nor operate with any degree of economy, without an adequate supply of leads and slugs for spacing, and slugs or metal base for cut-mounting.

The standards of newspaper typography of both news and advertising pages will no longer tolerate the use of nicked, badly worn or pieced rules and ornaments used in boxes and as borders for ads, want-ad rules and single-column dashes. These must be new each time used, and available in adequate supply at all times.

The Monotype Material Making Machine is in a class all by itself as a high-speed producer of this material. It makes Leads and Slugs in sizes from 1 to 18 point; Strip Rules from 1½ to 18 point; Ornamental Borders from 2 point to 12 point—all cast in continuous strips or delivered by the machine cut to any desired measure. Single-column Dashes are made in a large variety of designs from 2 to 12 point, and single-piece Want-Ad Rules of 1, 1½ and 2 point body. No other strip-casting machine makes Ornamental Strip Borders and Single-Piece Dashes and Rules.

A broadside, 21½ x 33 inches, shows several hundred Rules, Ornamental Border Designs, Single-Column Dashes, etc., available on the Monotype Material Making Machine. Nothing like it has ever before been printed. Send for your copy today.

(Set in Monotype Sans Serif Series)

The Monotype Material Making Machine will produce more material than any other machine ever manufactured or designed. When you buy a strip-casting machine it pays to buy the best. Write for details.

LANSTON MONOTYPE MACHINE COMPANY
Twenty-fourth at Locust Street, Philadelphia, Pa.

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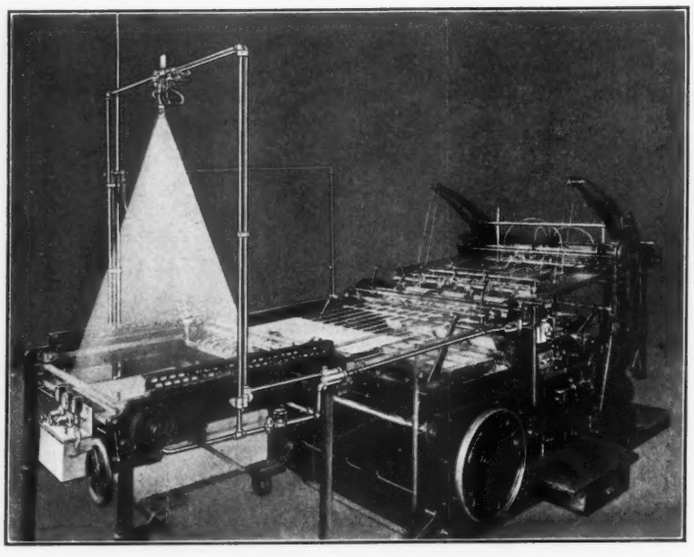
The New Offset Eliminator

Chosen By Leading Printing Establishments Because of Its Proven Superiority



NOTE:—In order to illustrate the operation of the CLEANPRINT Unit, the spray shown has been greatly exaggerated. Actually, it is practically invisible.

A simple, compact spray unit, rigidly attached to the press, with a practically invisible spray, that . . .

- Prevents offset, smear, smudge and sticking, whether it be single colors, overprints, process work, metallic, high-gloss, Duotone or pyroxylin inks, glassine or cellophane, without affecting paper, colors or inks.
- Eliminates all "overprint" difficulties.
- Permits the use of varnish at regular running speed, at half the cost of spirit varnishing.
- Is effective with all kinds of stock, and allows running of light stocks without delivery trouble.
- Permits work without loss of time through ink manipulation. You simply "Follow the progressives."
- Does not require additional floor space.
- Is controlled entirely by compressed air.
- Operates only when the press is *printing.*
- Uses a minimum amount of spray—one gallon of CLEANPRINT liquid is sufficient for 100,000 sheets 25x38, and the *time* of spray can be *lengthened* to suit each job.
- Will not annoy operator, soil the press or clog forms—yet so simple it requires no previous experience and is absolutely foolproof.

SIMPLE — COMPACT — EFFICIENT

A well-known New York printer has this to say: "When printers realize the importance of the CLEANPRINT Unit, the wider field it opens for work formerly considered almost impossible of execution, the greater speeds in production . . . the finer work that can be produced . . . the speed with which it will pay for itself, they will not hesitate to equip every press in their plants . . . CLEANPRINT Units are an absolute necessity wherever offset troubles exist."

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Dealers of Established Reputation in Rebuilt Printers' and Bookbinders' Machinery

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Exclusive Dayco Development Gives Controlled Softness and Long Life

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CORRECT DEGREE OF PLASTICITY IS STANDARDIZED IN

DAYCO "STAYPUT" ROLLERS FOR NEWSPAPERS

The material used in the Dayco Roller is so tough that resilience need not be sacrificed for the sake of durability.

The trend in newspaper rollers has been toward hardness, which has proved detrimental to good results. Since softer rollers are desirable, newspaper men everywhere will now welcome the opportunity of obtaining *controlled softness and correct plasticity*—plus longer life and more efficient service . . . qualities found only in Dayco "Stayput" Rollers.

At the Mechanical Convention in Chicago this year, Dayco Rollers were highly praised for their greater plasticity, their exact precision, their longer life, their contribution to good printing, their elimination of roller jumping, their reduction of ink mist, and their uniform ink distribution at top press speeds.

Dayco Rollers are available in any degree of softness for every type of press and every class of printing. Tell us what stocks you have on hand for rebuilding and we'll give you complete information about getting them made up into Daycos. Write us today.

Remember, there is only one patented sleeve-type roller—Dayco, the original synthetic rubber roller. Insist upon the genuine.

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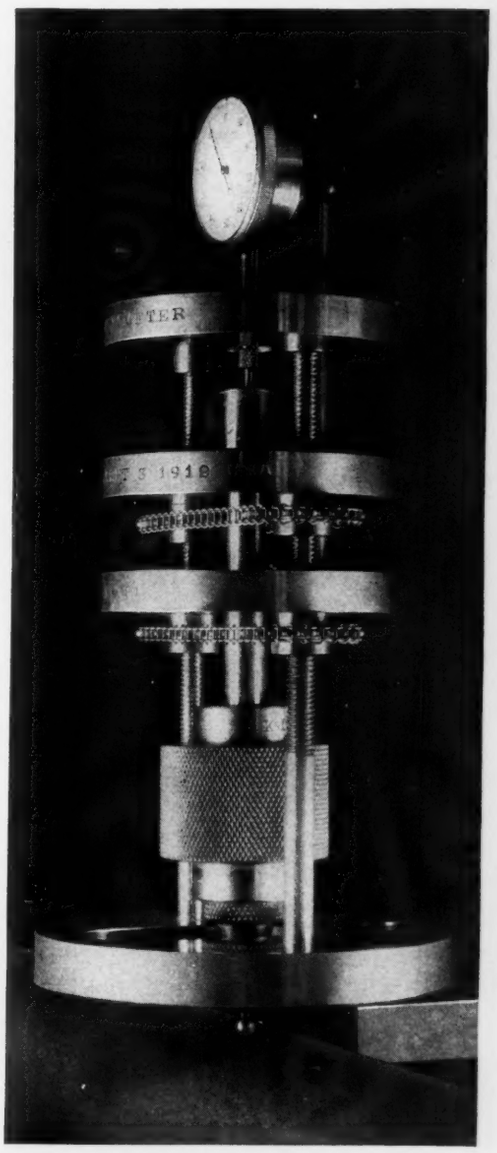
CAN BE APPLIED TO ANY STOCK



Gauge for Testing Roller Softness

Dayco Stayput Rollers

ORIGINAL SYNTHETIC RUBBER NEWSPAPER ROLLERS

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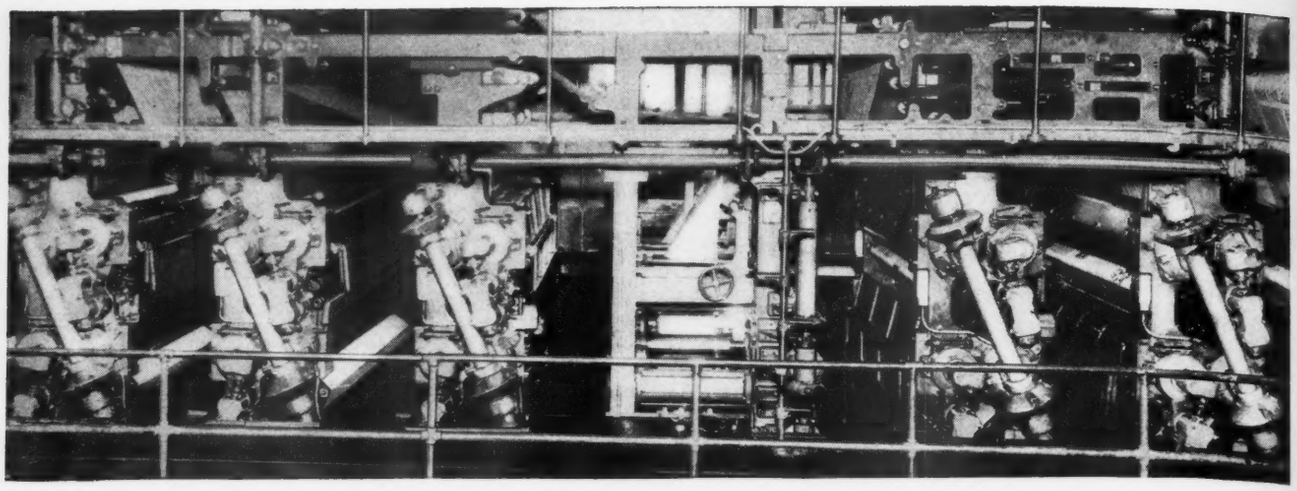
THE ALL-PURPOSE ROLLERS FOR FORM, FEED, DISTRIBUTOR, ETC.



Presses of the New York World-Telegram—a large user of Goodyear Underpacking

You Can Print FASTER and CLEANER with RUBBER

THE superiority of rubber blankets and underpacking in modern high-speed printing is shown by the steadily increasing number of large metropolitan papers dressing their presses with Goodyear rubber.

For years the majority of papers winning awards for typographical excellence have been printed with Goodyear Rubber Blankets!

Today more newspapers are printed on Goodyear Rubber Underpacking than on any other kind!

You bet there's a reason. Lots of them! Experience proves that these resilient blankets hug the cylinder and do not beat down. They stand up to gauge, maintain correct surface speed. They are highly oil-resistant; do not bolster, crack or peel; nor do they retain leader marks, or "offset."

The result is sharp, clear, fast printing and clean half-tone reproduction *at low cost.* A trial will quickly convince you as it has so many others. For full particulars write Goodyear, Akron, Ohio, or Los Angeles, California.

Branches in all principal cities.

PRESS-PROVED GOODYEAR PRODUCTS

Red Top Felt Blankets
Rubber Underpacking
Rubber Ink Rollers
Press-Cutting Rubbers
Wingfoot Air Hose

Made by the makers of Goodyear Tires

THE GREATEST NAME IN RUBBER

GOODYEAR

AUGUST 1936
Volume 52—No. 5

PRINTING EQUIPMENT ENGINEER

Trade-Mark Registered U. S. Pat. Office

A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field

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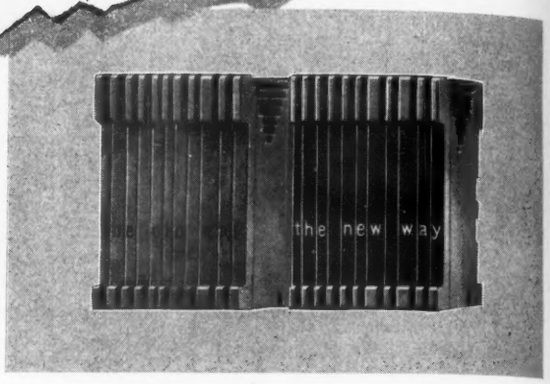
Published by Don Will • Edited by Mac Sinclair

Associate Editors: Ira D. Pilliard, Adam Henry Reiser

Answering your questions about Matrix Contrast Servic



Q. What is Matrix Contrast Service?

A. A service which creates 100% contrast in the reference marks on line composing machine matrices—by means of a patented process which gives you a brilliant white letter on a solid black background.

Q. Do you manufacture the matrices?

A. No, the Black and White contrast is applied to your own matrices, in your own composing room, and to the new matrices which you purchase from the Linotype and Intertype manufacturers.

Q. What does this service accomplish?

A. It prevents at least 25% of all errors in original machine composition. That figure is the conservative guaranteed saving, the actual average being 33%.

Q. How do contrast reference marks prevent errors?

A. When the operator thinks that he—or the machine—has made an error, he glances at his line of matrices in the assembling elevator. With contrast reference marks, errors are easily detected and corrected before lines are cast.

Q. Where do the savings come in?

A. Fewer errors mean less non-productive composition, less unnecessary work for proofreaders and floor men, less waste of time and energy.

Q. What is the final net result?

A. The net result of Matrix Contrast Service is an increase in the production of your line composing machines of approximately 4%.

Q. How can I satisfy myself that your claims are true?

A. First, by talking with users of Matrix Contrast Service in your vicinity. Second, by means of accurate surveys made in plants of about the same size as yours, before and after installation of Matrix Contrast Service.

Q. Do you sell the service on a trial basis?

A. Yes, in that specified results are guaranteed. If you don't get these results, you have incurred no expense and no obligation.

HAVE YOU ANY OTHER QUESTIONS ? WE'LL BE GLAD TO ANSWER THEM

MATRIX CONTRAST CORPORATION

EMPIRE STATE BUILDING . . . . NEW YORK

Craftsmen's Convention

By Ira D. Pilliard

PROBABLY the most important and far reaching action taken at the Minneapolis Craftsmen's Conference was the approval given by the Conference on Wednesday morning, August 12, to the organization and establishment of the Craftsmen's Research Commission which will handle all investigational and research problems arising in the entire Graphic Arts industry. The function of the commission will be to deal with the fundamentals of the various processes, the correlation of technical information and the establishment of standards for the guidance of the industry.

Newly-elected President Clark Long has appointed the following Craftsmen to serve on the Research Commission:

Three-year Term—V. Winfield Challenger, Philadelphia, Pa., and Hon. A. E. Giegengack.

Two-year Term—Thomas A. Cordis, San Francisco, and J. Homer Winkler, Cleveland, Ohio.

One-year Term—Oliver Watson, Toronto, Can., and J. Gus Liebenow, Chicago, Ill.

The seventh member by the organization terms of the Commission will be Retiring President John B. Curry of Boston, Mass.

J. Gus Liebenow stated in the committee's report to the convention, that it would probably require from two to three years before the Research Commission would be able to function so as to be of value to its members in the industry.

Long known as one of the famous color printing centers, Minneapolis recently added new laurels to its many other printorial achievements by most successfully playing host from August 9 to 12 to the Seventeenth Annual Convention of the International Association of Printing House Craftsmen at the Hotel Radisson. Registrations exceeded all former conventions, the number being in excess of 760. Forty-two clubs were represented.

Days before the date set for the opening of the convention, motor caravans and trains brought groups of delegates to Minneapolis. Among these was a special train from Chicago bearing 100 Craftsmen and their families from the east, south and west. This delegation was greeted upon its arrival in Minneapolis Sunday evening by a military band and a host of Minneapolis and St. Paul Craftsmen, who formed a reception committee to welcome the visiting delegates and to escort them to the hotel.

Earlier arrivals had been treated by the host clubs to a circle automobile tour of the Twin Cities which included such interesting and scenic spots as Lake of the Isles, Minnehaha Falls, Fort Snelling, Falls of St. Anthony, the University of Minnesota Campus and the mighty Mississippi.

A pre-convention get-together Sunday night in the Moorish Room of the West Hotel provided opportunity for renewing old friendships, forming new ones and for much "gemuetlichkeit!"

The first general business session of the convention was called to order Monday morning at 9 o'clock by Roy Brewer, of Minneapolis, General Convention Chairman, in the Gold Room of the Radisson Hotel.

Craftsman Herman Loehlin, of the Minneapolis Club, was then invited to deliver the Invocation.

Having introduced H. J. Miller, President of the Minneapolis Civic and Commerce Association, who delivered the address of welcome, and International Vice President George Marshall, who gave the response, Mr. Brewer called upon Clarence A. Groettum, President of the Minneapolis Club, to introduce International President J. B. Curry of Boston.

Much applause greeted President Curry's announcements that four new clubs had been granted charters during the year—Duluth-Superior, Indianapolis, Louisville and Worcester—and that a fifth application, that of the Honolulu, H. I., Club was expected daily.

Among those seated upon the speakers' platform at the opening session were Past International Presidents Harvey H. Weber, A. E. Giegengack, Fred J. Hagen, Oliver Watson, V. Winfield Challenger and Thomas E. Cordis.

Ernest F. Trotter, Managing Editor of *Printing*, was the first speaker. His title was "A Look Ahead Into Printing Equipment and Methods." Mr. Trotter's address was well received. Reviewing all of the more important creations for the betterment of the various printing processes ranging all the way from finer commercial and newspaper color printing,

Clark R. Long who has been advanced to the Presidency of the International Association of Printing House Craftsmen.

engraving and plate-making processes, applications of the electric eye in the industry, pre-makeready and other developments, the speaker indicated what apparently would be the trend of developments in the next few years. Decentralization of the printing plant from the large to the smaller cities was forecast by Mr. Trotter.

Monday's Clinics

As had been announced previously, the general session was broken up into several group meetings, each of which was devoted to a particular departmental process in the printing plant.

Following the general plan adopted at recent A.N.P.A. Mechanical Conferences, each Craftsman selected the meeting devoted to the particular subject in which he was most interested and at which time he could obtain highly specialized technical information about that subject. The meetings were devoted to Photo-Engraving, Composing Room, Gravure and Inks.

Composing Room Clinic

The Monday Composing Room Clinic generated so much interest that Chairman Howard King announced a supplemental session would be held on Tuesday morning.

The present-day trend in modern typography according to Douglas McMurtrie demands a limited assortment of type faces. Three essential faces: Sans Serif, the flat or square serifs and letters of the Garamond character with two or three "occasional faces" will cover the field. The architectural motif of modern layouts can be carried out effectively with these faces. In book work where comfortable reading is the essential quality, letters of the Sans Serif and flat serif style are not desirable.

Old style and modern letters were discussed as to their relative demand in book form.

In the discussion by Haywood H. Hunt and Frank McCaffery it was brought out certain type faces will continue sound for commercial and book work. Bulmer was named as one of the transitional letters having characteristic between old style and modern, being compared with letters such as Bodoni and the old style characters. The flat serif letters

Cleveland in 1937

Speaking for the Cleveland Club of Printing House Craftsmen, J. Homer Winkler, invited the International Association of Printing House Craftsmen to hold its 1937 convention in Cleveland. The invitation was accepted. The Cleveland Club wishes to assure the International organization that it will be prepared to entertain the delegates and their families in such a way that everyone will be glad they came.

have found a definite place in modern advertising and in commercial work. Among these letters the extra bold and letters of medium weight are the most effective.

Futura embodies the best elements of design in the San Serif letters. The redesigning of some of the characters would improve legibility, making the reader less type conscious.

Cursive letters have become popular during the last few years, injecting an informal feeling into the severe geometric layouts, giving free, pleasing appeal.

Letters carrying out the third dimension have found a field in attaining novel effects, but should be used with discretion. The legibility of these types was questioned, but this was offset by their attention value.

Spacing of types was emphasized among the sans serif, flat serif letters, as with Bodoni and other classic faces, wide line spacing affects legibility.

Selection of types for expressing the message of various products, promotion, institutional, and other services were discussed. Revival of condensed faces has been brought about through their element of verticality which fits the feeling of architectural design in modern layouts. The effects gained through generous letter spacing of these condensed faces has added an unusual mote in typography.

Three questions must be comprehensively answered before the layout man begins his work on designing a piece of printing.

What does the customer want to see? Who was the appeal directed to? Where do they live and through what medium are they to be transmitted? These were some of the questions answered by Winfield Challanger.

The point of being familiar with the copy before layout is made was brought out as an essential point. Accuracy of the layout as to copy space, headings, and sizes of cuts should be as definitely established as possible. Harmony of illustration and type faces should be given careful consideration. Simplicity is the key note for effective layout—feeling of strain or effort defeats the purpose of the finished work. There should be distinction made of what is termed the selling layout designed to sell the customer on an idea and that of the layout which is to be used in the mechanical production of the job.

Copy fitting was discussed quite extensively.

Control of production of the many elements entering into a job of printing should remain as far as possible in the hands of the composing room.

Engravings and electrotypes should be ordered to fit the mechanical problems to eliminate resetting the work on account of variation in size.

How far should the composing room go in pre-makeready? was discussed by Joe Kearney, Lee V. Augustine and H. W. Hacker.

The speakers brought out emphatically that the composing room should go as far as possible in bringing the forms prepared for the pressroom to as nearly perfect a condition as possible. Accuracy through the use of precision machinery, gauges and line-up equipment should be given careful study.

Relative costs showing savings in pressroom time emphasized the importance of composing room foreman in developing a pre-makeready department.

Proofing of small unit forms before putting on press, eliminating inaccurate cuts, broken type and other deficiencies can be made in essential saving of the pressroom costs.

Line-up and register equipment, making it possible to closely register forms before they are put on the press; make-up gauges for checking the size, justification, and register of type pages, close pre-inspection and working to precision standards are points that should be given careful study by composing room executives.

Methods of mortising on work that will not carry the expense of electrotyping, workups and other composing room problems were discussed and demonstrated through specimen forms which were exhibited.

Gravure Clinic

The Monday morning Gravure Session was held simultaneously with other departmental clinic meetings. Craftsman Ralph Winship, Superintendent Gravure Department, Beck Engraving Company, Philadelphia, acted as chairman. It was evident that both roto and sheet-fed gravure have made great strides recently. This was evidenced by the numerous examples of both single and multi-color specimens on display.

The several speakers presented a rather thorough analysis of improved presses, inks and papers. Chairman Winship called on E. L. Eilert of the Gravure Engraving Company, Minneapolis, who described briefly the technique of the process and spoke from the standpoint of the small and medium sized plant.

Gravure, while of European origin, has been gradually developed in this country. Started as a medium for printing Sunday supplements in newspapers, it is now possible to print sheets size 50 in. by 60 in. The small and medium sized printer can obtain presses costing from $3000 to $5000. Mr. Eilert asserted that 90% of gravure production troubles did not lie in equipment or materials but could be attributed to the human element.

Dr. H. E. Phifer, who is associated with the Intag Company, Chicago, a subsidiary of the International Printing Ink Corporation, addressed the meeting. His address was an excellent presentation of the function of gravure inks and he described briefly some manufacturing problems. Gravure inks consist of gums or binders, and solvents or thinners which bind the pigments to the paper when dry. Pigments are the most important ingredients of any ink. Practically all dyes used in the manufacture of gravure inks are synthetic. Many pigments which would be otherwise suitable for gravure inks cannot be used because of abrasive qualities. An interesting point in Dr. Phifer's address was that gravure ink makers have already developed inks which are "faster" than any existing gravure press speeds. This has been brought about by intensive investigational work on the part of ink chemists to meet the demands made for increased production speeds.

The next speaker was Richard Nagel, Jr., of the Nagel-Ryan Company, Detroit. He asserted that in the last two years gravure press design had been developed greatly. Presses are now obtainable with the cascade system of ink distribution. The ink is pumped upwardly from a reservoir in the bottom of the press and is splashed directly on the printing cylinder. The doctor blade is positioned at a 60-deg. angle directly behind the line of impression. Drying has been stepped up by means of the simple principle of blowing cold (room temperature) air on each sheet after it leaves the impression cylinder so that the majority of the sheets are dry when they reach the delivery.

On roll-fed gravure presses, speeds up to 25,000 i.p.h. are obtainable. Inks used consist of 50% solvent and 50% ink. Solvents are now reclaimed as much as 80% to 90% in some plants. Impression and form cylinders are now same size. Plates and sold copper cylinders and plates attachable to the plate cylinder may be used. In the case of the latter, the plate is gapless. Running speeds of presses are dependent upon weight of paper. Stock most suitable ranges from 80 to 100 lbs. Upward of 400,000 impressions may be obtained before the doctor blade starts wearing the plate although chrome plating retards plate wear considerably.

Clifford Pinkham, associated with the Chicago office of Dill & Collins, spoke on the problems of the paper manufacturer. Gravure stock must not be hard since dry fibres break under impression. Mechanical stretch is caused by breaking down of fibres under impression. The ideal state of paper is reached when it contains from 5% to 6% more moisture than the relative humidity of the pressroom. Until some chemist discovers a way to encase each individual fibre to protect it from moisture variation, papermakers can't guarantee changes in fibre.

Dr. George Cramer, Director of Research for Sinclair & Valentine, spoke briefly on gravure inks and stated it was only a matter of time until inks will be produced without odors and in which will be incorporated all qualities desirable for the gravure process.

Ink Clinic

Charles R. Conquergood acted as chairman of the Ink Clinic Monday morning.

Charles Sangwin, Martin Driscoll Co., Milwaukee, spoke upon the subject, "What Information the Printing-Ink Salesman Needs to Obtain from the Printer in Order to Intelligently Supply His Needs." Mr. Sangwin stated the printing-ink salesman should be a counsellor to his customer in the solution of his ink problems. He deprecated the all too frequent practice of "doping" inks. This practice on the part of pressmen, he stated, was perhaps the greatest cause for spoiled and rejected work. He advocated that a sample sheet of the paper upon which the job would be printed should be submitted to the ink manufacturer for proofing purposes when placing an order for ink. Many ink salesmen, he observed, neglect this very essential bit of procedure,

International Officers

President, Clark Long, Washington, D. C.
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thereby frequently adding to their own, the ink makers', and the printers' difficulties.

Kenneth McKiernan spoke on "Ink Standardization." He stated that many users and not a few manufacturers of inks were of the opinion that the printing industry might profit materially from a successful solution of the following three problems: (1) Definite color designations; (2) A more correct method of labeling the contents, and (3) A more equitable method of selling inks; that is, changing from weight to bulk.

Proceeding to discuss the need for a systematic method of designating colors, he stated that the present method of the ink manufacturers resulted in a seemingly unwarranted multiplicity of colors, in which each manufactured his own shades, a condition which worked severe hardships upon the printer and the ink manufacturer. He stressed the need for a universal color chart, so that the printer or the advertising man, when designating a color such as Green 305, would always be assured to obtaining the same shade. He stated that the German dye manufacturers have standardized on 200 colors and the British on 220.

Dr. Chase, of Sears-Roebuck Co., Chicago, an authority on color, has standardized on 100 colors. Glen Price, production manager, U. S. Gypsum Co., has compiled a book of the company's standard colors in which he has specified for the benefit of advertising agencies and printers to whom their advertising work may be sublet, the color and the firm from which these inks may be obtained. The Advertising Department of the Liquid Carbonic Company standardized on four colors which could be used in different sequence for the company's work. The artists producing advertising pieces for the Carbonic Company are limited to these colors and must designate the sequence. These and other illustrations of color standardization were cited by Mr. McKiernan in support of his plea for the necessity of further ink standardization.

Speaking upon the desirability of a more correct and informative method of labeling ink containers, he stated that, since ink manufacturers make inks to work on specific grades of paper and special types of presses, that the labels should contain information as to what type of paper should be used and the kinds of presses upon which the ink might be expected to work satisfactorily. Other qualities, likewise, should be marked; such as, alkali-proof, bleed-proof, etc.

He closed his remarks advocating that ink should be sold by bulk rather than by weight. "Generally speaking, inks that bulk alike will cover approximately the same amount of surface," he stated. "These changes may be a long time in coming, but like the 'beggar's penny' it will be something more than nothing."

Photoengraving Clinic

The Photoengraving Clinic on Monday was ably presided over by Roy W. Knipschild, of the Rosenow Company, Chicago. Among the principal items discussed were the new Claybourn machine for inserting dead metal and bearers in photoengravings. This machine permits the photoengraver to rout his plates completely before proofing to avoid frisketing and speeding up proofing. The dead metal inserted is circular in shape and is removed easily by the electrotype router without the need of progressive proofs for identification.

Some brass halftones, made by the Walker Engraving Company, New York, N. Y., etched in brass now being manufactured for that purpose by the Chase Brass & Copper Company, were exhibited by Summerfield Eney of the Champion Paper & Fibre Company. Some interesting life service tests on these halftones as compared with copper halftones and electrotypes are to be made by the Claybourn Corporation.

H. W. Hacker, of the Hacker Manufacturing Company, contributed some valuable thoughts on pre-makeready departments and precision in letterpress printing. He also discussed the increasing use of electrotypes that had the makeready incorporated in them. J. Homer Winkler of the Ace Electrotype Company, Cleveland, added many interesting items to the general discussion.

Some of the newer types of one-shot cameras used in making direct-color photographs were briefly described and discussed by the chairman. This extremely technical subject was so clearly and dexterously handled that it furnished one of the high spots of the Clinic.

The problem of approximating in the proofing of flat color photo-engravings the results to be obtained in the printing of that subject from curved nickeltypes on high-speed multi-color rotary presses was also discussed. The difficulty of exactly matching engravers' color proofs has ever been a popular problem to review and came in for its share of consideration at this gathering.

Approximately six or seven previously written articles on miscellaneous subjects were presented by title and will be included in the proceedings of this Clinic. Thirty persons were in attendance and the rapid-fire discussion, the keen interest and attentiveness displayed indicates that such clinics will be an interesting addition to future conventions.

Beautiful displays of direct color photography, transparencies, proofs of reproductions of them, separate color negatives, new color copy processes and magnificent printed specimens were exhibited and were used to illustrate many of the points under discussion.

Monday Afternoon Meeting

Hon. A. E. Giegengack, United States Public Printer, presented a very descriptive and entertaining discussion about the world's largest printing plant. Craftsman Giegengack has just revised the subject material and showed many new stereopticon slides to illustrate the various departments in the gigantic plant of which he is in charge.

Manufacturers' Index

The following printing equipment and supply manufacturers either exhibited Visual Aids at the Minneapolis Craftsmen's Convention or were represented by company executives:

American Type Founders, Inc., Elizabeth, N. J.
Chandler & Price Co., Cleveland, Ohio.
Chemical Color & Supply Co., Chicago, Ill.
Dayco Roller Co., Dayton, Ohio.
Dennison Manufacturing Co.
Graphic Arts Laboratories, Chicago, Ill.
General Electric Co., Schenectady, N. Y.
H. W. Hacker Manufacturing Co., Chicago, Ill.
Haloid Company, Rochester, N. Y.
Harris Seybold Potter, Cleveland, Ohio.
R. Hoe & Company, Inc., New York, N. Y.
Ideal Roller & Manufacturing Co., Chicago, Ill.
International Printing Ink Corporation, New York, N. Y.
Intertype Corporation, Brooklyn, N. Y.
Johnstone Electric Co., Chicago, Ill.
Kimble Electric Co., Chicago, Ill.
Kingsport Press Co., Kingsport, Tenn.
Lanston Monotype Machine Co., Philadelphia, Pa.
Lewis Roberts.
Ludlow Typograph Co., Chicago, Ill.
Mergenthaler Linotype Co., Brooklyn, N. Y.
Miehle Printing Press & Manufacturing Co., Chicago, Ill.
Miller Printing Machinery Co., Pittsburgh, Pa.
Milwaukee Saw-Trimmer Corporation.
Monomelt Company, Minneapolis, Minn.
Paasche Air Brush Company, Chicago, Ill.
Peerless Roll Leaf Company.
Printing Machinery Co., Cincinnati, Ohio.
H. B. Rouse & Company, Chicago, Ill.
Ruthererg Color Photography Co., Hollywood, Calif.
Sam'l Bingham's Son Manufacturing Co., Chicago, Ill.
Sigmund Ullman Co., Chicago, Ill.
Simco Corporation, Philadelphia, Pa.
Sinclair & Valentine, New York, N. Y.
Stereotype Equipment Company, Chicago, Ill.
Vandercook & Sons, Chicago, Ill.
Wallin Manufacturing Co., Omaha, Neb.

The Government Printing Office handles 90,000,000 lbs. of freight annually and produces four daily, eight weekly, two semi-monthly, twenty-one monthly, three bi-monthly and four quarterly publications. In 1935 a total of 9000 purchase orders were issued which aggregated $6,250,000, of which $4,750,000 was spent for paper alone. The money order department last year sent out 228,000,000 blanks. At this time the payroll exceeds $1,000,000 a month for over 5000 employees.

After receiving resolutions and amendments and referring them to committees, the reports of officers as well as the report of the Research Commission, the meeting was adjourned.

Monday evening the Craftsmen and their families were entertained at the Automobile Country Club at Bloomington-On-Minnesota with a dinner-dance. Before a blazing bonfire International President John B. Curry was adopted into the Ojibway Indian Tribe with suitable ceremonies. He was given the name of White Cloud by Chief Little Wolf.

Tuesday Morning Session

After some preliminary business matters, President Curry introduced Dr. C. A. Prosser, Director of Dunwoody Industrial Institute at Minneapolis, and stated he would address the meeting upon "The Disappearance of Skill and Knowledge in the Printing Crafts." A digest of Dr. Prosser's address will appear in an early issue of *Printing* Equipment *Engineer*.

Tuesday's Clinical Sessions

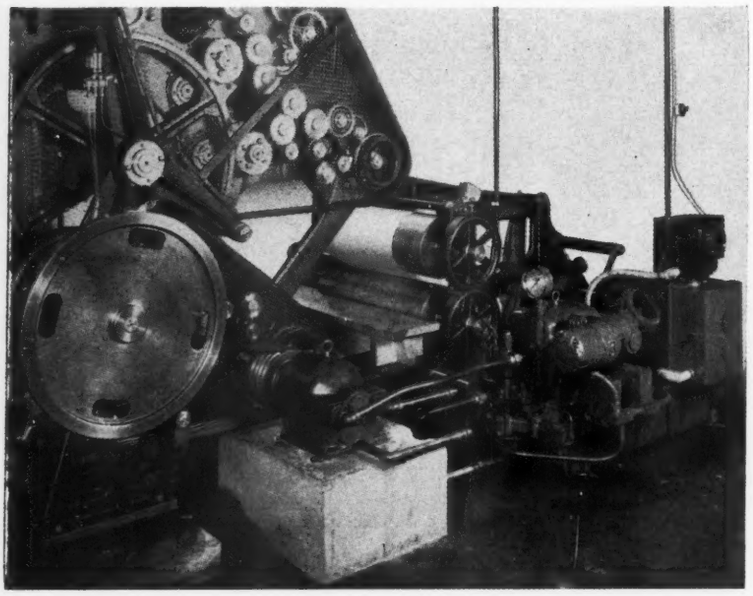
After Dr. Prosser's talk, the Clinics got under way. These were devoted to Offset, Presswork, Paper and Electrotyping. Unfortunately, arrangements for presenting a resume of the Paper Clinic miscarried but we hope to print it in an early issue. The Paper Clinic was presided over by Summerfield Eney, Jr., of the Champion Paper & Fibre Company, New York.

Electrotyping Clinic

Lee Sampson, of the Sampson-Ollier Co., Chicago, presided over the Tuesday morning Electrotyping Clinic. An attendance of 25 or 30 of the members were much interested in the three major subjects presented for discussion.

The nature and applications of Tenaplate, a new electrotyping molding medium, were described by J. Homer Winkler of the Ace Electrotype Co., Cleveland. This material is the outstanding development in the electrotyping industry in the past ten years. The probability is that it will replace a large portion of the present wax molding. Its principal advantages are: Speed of molding, elimination of pre-heating and case preparation, no cutting down or building is required, and an extreme sharpness and clearness of type matter is obtained. Considerable interest was displayed in this subject and much discussion resulted.

(*Continued on Page 18*)



View of Meisel Printing Press with Oilgear Fluid Power Variable Speed Transmission interposed between the constant speed driving motor (at right) and the main driving pulley (left) of the press, in plant of the Egry Register Company, Dayton, Ohio. A multiple V-belt drive hookup is used between the transmission and the driving pulley.

Oilgear

Newly Redesigned Transmissions Operate Roll-Fed Printing Presses

By Staff Writer

THE recently redesigned Oilgear Fluid Power Variable Speed Transmissions furnished in sizes ranging from 2 to 150 h.p., in addition to being used for variable speed control in various applications in the industry, are employed for operating and controlling the main drive of single and multi-color printing presses, usually of the roll-fed type. The transmission units are mounted between the main drive of the printing press and a constant speed driving motor. The input end of the transmission is connected to the constant speed driving motor and the output end of the transmission unit is coupled to the main driving shaft of the press.

The main driving motor or other source of power connected to the input end of the transmission is usually operated continuously except when it is desired to shut down the machine entirely. Control of the speed of the press—starting, stopping and inching is obtained by means of pushbutton stations mounted at convenient points about the press.

The Oilgear Fluid Power Variable Speed Transmission consists of a volumetric variable displacement pump driving a constant displacement motor. Lubricating oil is used as the power fluid which flows from unit to unit through drilled and cored passages provided for that purpose. The transmission and the control mechanism are contained within a compact case. The unit is protected against overload by integral relief valves in the fluid passages. It is the claim of the manufacturer that the transmission produces stepless volumetric speed control irrespective of loads within its working range which is especially desirable on color register printing or the production of multiple equi-spaced continously-fed roll forms.

Usually the master pushbutton station has five stations, namely *Safe Stop*, *Run*, *Decrease*, *Increase* and *Inch*. As many stations may be used as there are control points around the press. When the *Safe Stop* button is pushed a valve flanged to the transmission is operated which bypasses the oil delivered by the input unit and blocks the discharge line from the press drive or transmission output end, forcing this oil to go through a resistance type braking valve which brings the press to a stop. At the same time the electric control motor on the side of the transmission is reducing the stroke of the input end of transmission to a point where it will deliver only enough oil to drive the press at slow or inching speed.

The control is positively interlocked so that until the transmission control has been reduced to slow speed the press cannot be started. When the *Safe Stop* button is pressed in at one station the press cannot be started from that or any other station until the *Safe Stop* button is released by pressing the *Run* button at that station.

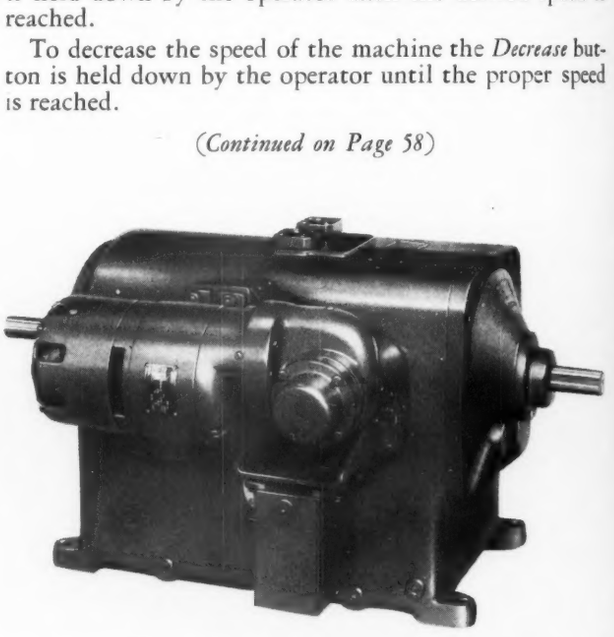
When the *Inch* button is depressed by the operator the Start-and-Stop valve is operated, closing the transmission input end bypass and opening the oil circuit to the transmission output end, causing the press to operate at slow speed only as long as the push button is depressed. When this button is released, the valve moves to the opposite position to stop the press.

To start the machine the *Increase* button is depressed momentarily. This moves the valve to the start position, causing the press to run continuously at slow speed until other control stations are operated.

To increase the speed of the press, the *Increase* button is held down by the operator until the desired speed is reached.

To decrease the speed of the machine the *Decrease* button is held down by the operator until the proper speed is reached.

(Continued on Page 58)



Type DEC Oilgear Transmission with electric remote control which is used mostly for printing press and paper-making drives. The transmission is interposed between the constant-speed driving motor at the input end and the driving pulley of the machine on which it is to be used at the output end. Speed is 1140 r.p.m. The minimum output speed is from 5 to 30 r.p.m. as adjusted, while the maximum output speed is 1080 r.p.m. The small electric motor attached to the side of the transmission varies the stroke of the pump and speed of the output shaft through a gear reduction head, work nut and screw.

Modern Seven-League Boots!

IDEAL Rollers have been "going places" in the graphic arts industry. The fast pace set in this age of speed calls for the adoption of the mythical seven-league boots to enable craftsmen to progress with long, fast, sure strides in every phase of production.

New demands are made daily upon the printer to produce the unusual and "out of the beaten path" printed product. New ink colorings are being used, and with the innovation of speedier and more efficient machinery it has been necessary to speed up the drying qualities of the inks. All these progressive steps would mean trouble for the printer were it not that Ideal is keeping step and meeting these problems even before the pressman is aware of his needs.

For each type of work, and each formula of ink, there is an Ideal roller. It may be Graphic (guaranteed non-meltable) composition, Ideal Vulcanized Oil material, or it may be synthetic tubed or solid synthetic rubber materials specially developed to withstand the new thinners, driers and ingredients of modern inks for modern presses.

You owe it to the progressive spirit of your plant to adopt Ideal Roller equipment—

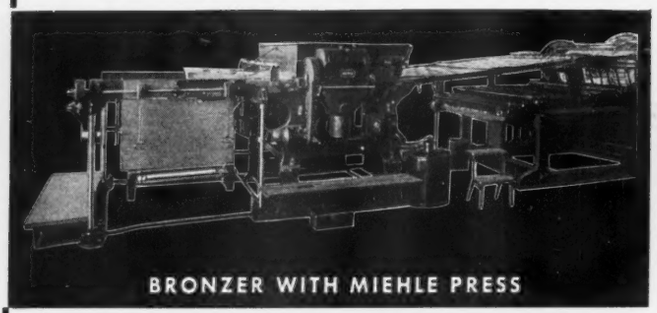
The choice of true Craftsmen

IDEAL ROLLER & MFG. CO.

CHICAGO · NEW YORK

Sales representatives are located in all principal cities

Another GOLD RUSH IS ON
PRINTERS FIND "PAY DIRT"



BRONZER WITH MIEHLE PRESS

BRONZER WITH SMALL OFFSET

OUTSTANDING FEATURES

(1) PORTABLE—Mounted on Hyatt roller-bearing casters.
(2) SIMPLE—Any pressman can turn out perfect work.
(3) VERSATILE—Handles any weight of paper, cardboard or metal up to 3/16 of an inch.
(4) CONTINUOUS FEED—Ready for action by merely dropping press connection in place. Unnecessary to time the press.
(5) PRESS CONNECTION—Driven from bronzer and independent from press, folds up instantly offering no interference.
(6) VARIABLE SPEED—Conveyor belt speed variable, unnecessary to change speed of bronzing pads or dusting belts.
(7) BRONZE CONTROL—Fountain adjustable from a light form to solid-all-over.
(8) CLEAN WORK—Six individual dusting belts and strong vacuum suction removing all surplus bronze assuring clean work.
(9) BRONZE COLLECTING SYSTEM—All old bronze collected and saved.
(10) SERVICE—Erected by experts, demonstrated in actual use to pressman.

THE NEW MILWAUKEE BRONZER

The gold rush is on. Advertisers and printing buyers are demanding a new standard in gold and silver printing for all types of printed material. Only modern and efficient bronzing equipment can supply this high quality work. That's why the NEW MILWAUKEE BRONZER is becoming standard equipment in high grade printing plants. It is the first original straight line flat bed bronzer. This machine works smoothly and effectively on any letterpress or offset press. One operation delivers clean, solidly covered, highly lustrous metallic bronze impressions. Its speed conforms to that of the press. Unquestionably the NEW MILWAUKEE BRONZER is a gold mine for the printer who needs the highest quality bronzing work. Write for further details and prices.

C. B. HENSCHEL MANUFACTURING CO.
229 West Mineral Street - - Milwaukee, Wisconsin

New Type Faces by Intertype

Among the new type faces announced by Intertype this month is a series of new initials, designed by George Trenholm for use with Egmont. The 36 pt. is the only size now available. The complete alphabet is shown in an attractive 24-page booklet which will be sent upon request to those who may be interested.

18 Point Intertype Vogue
Condensed $123456789

36 Point Egmont Initials

60 Point Cairo Open

Cairo Open, a companion face to Intertype's Cairo series is now available in the 60-pt. size. This size was made for use with the composing stick attachment. Other sizes are in preparation.

Vogue Condensed has now been completed up to the 24-pt. size. One of the uses claimed for Vogue Condensed is its adaptability for use as a display face in the classified sections of newspapers where a light-face motif is desired.

Dunkak Returns

E. B. Dunkak, Sales Manager for the C. M. Kemp Manufacturing Co., on his return to Baltimore recently from a six-weeks' trip to England and France, announced that arrangements have been made for the installation of a 12-ton Kemp Immersion Heated Stereotype Pot for the London Daily *Mail*.

This installation will be built by Kemp's British associates, W. C. Holmes, Ltd.

In England, both W. C. Holmes, Ltd., of Huddersfield, and Hunt and Moscrop, in Manchester, will manufacture the entire line of Kemp equipment for the publishing, textile and steel industries.

CLINE-WESTINGHOUSE ELECTRICAL EQUIPMENT
ALTERNATING CURRENT
FOR NEWSPAPER PRESSES
DIRECT CURRENT
ENGINEERED FOR ... LOCAL CONDITIONS
CLINE SYSTEM
DESIGNED FOR ... PRESS REQUIREMENTS

FOR EFFICIENCY IN FLAT MAT SCORCHING

New **MODEL "K"**

Form-O-Scorch

This machine, designed at the request of stereotypers who demanded a heavier flat scorching machine, has been proven by practical use on Metropolitan newspapers, to be far more efficient in the preparation of flat matrices than any other scorcher. The new Model "K" Form-O-Scorch machine has a 200-lb. cover divided into sections which are raised and lowered by a cam.

Positioning separately from left to right these weights apply the same action to a mat as a man would in smoothing it out with his hand. This heavier cover holds it firmly between asbestos pads, protecting the mat between bearers so that the correct weight is applied and evenly distributed to flatten the mat perfectly. Write for details.

"THE SCORCHER SPECIALISTS OF THE TRADE"

AMERICAN PUBLISHERS SUPPLY
WEST LYNN, MASSACHUSETTS

Craftsmen

(*Continued from Page 13*)

L. W. Claybourn of the Claybourn Process Corporation, Milwaukee, described a new machine developed by his company for inserting dead material and bearers on fully routed photoengravings and in type forms. The inserted material is copper of the same thickness as halftone copper and the inside material is in circular form of several sizes. The advantages of this procedure are that it eliminates frisketing, thus decreasing the cost and speeding color proofing by the photoengravers, the dead material is placed exactly where desired and is very easily identified by the electrotype routers when it is removed. Mr. Claybourn also discussed the present trends of high speed multi-color letterpress printing and the probable requirements of a technical nature that will have to be worked out for a successful growth of this type of printing. As usual, Mr. Claybourn's remarks were pointed and meaty and were delivered in excellent style.

The Heat Treating of Electrotypes was described by J. Homer Winkler of the Ace Electrotype Co., Cleveland. (A full report of this work was published in the June issue of *Printing* Equipment *Engineer*.) Animated discussion followed this presentation, particularly by the electrotypers present.

A number of miscellaneous topics for discussion were then read and received some attention.

Offset Clinic

O. E. Freedman of the Manz Corporation, Chicago, Ill., presided at the Tuesday morning Offset Clinic. The first speaker to be called upon by the chairman was Harry A. Porter, Vice President of Harris Seybold Potter, Cleveland, who discussed "Offset as It Relates to the Graphic Arts Field in General." Business conditions appear extremely favorable for all branches of the Graphic Arts. The offset branch of the industry is going ahead by leaps and bounds. Offset methods have kept in step with photographic processes and marked improvements have been made in press equipment. The important note in the speaker's talk was that the collective mind of the Graphic Arts has been undergoing a gradual change so that there is an accepted place now in the industry for letterpress, offset and gravure. Each of the three methods has its own field, but offset is peculiarly adapted as a profitable auxiliary printing process to the letterpress plant. There is a trend away from the large centers which are within "automobile distance" from the smaller towns where offset plants are operating successfully and profitably.

In reply to a query by Max Schmidt of San Francisco, Messrs. Porter and B. D. Stevens of the Miehle Printing Press & Mfg. Co., both assured the audience that their companies stood ready to cooperate in every way in the matter of training skilled operators for offset presses. Mr. Stevens mentioned that the Pressmen's Home and Carnegie Institute of Technology at Pittsburgh are now and have been training skilled operators.

Mr. Stevens was inroduced by Chairman Freedman and spoke upon "Recent Developments in Offset Printing Presses." The major improvement in offset presses is that printing speeds have been stepped up. Increasing the operating speed brought about other construction problems such as sheet register, ink distribution and machine vibration, all of which have been compensated for. Perfect hair-line register, *i.e.*, hair line upon hair line and halftone dot upon dot, is an accomplished fact so far as machine construction is concerned.

The speaker stated that since paper is such a changeable thing, there is no such thing as perfect register all the way through any given job. While true rolling contact of the impression and plate cylinders is built into the press, paper is somewhat irregular in thickness. The high and low spots cause paper to stretch under impressional pressure.

The term "commercial register" was defined by the speaker as a sheet of paper upon which is printed one or more impressions of ½-pt. face rule, which upon being overprinted would not cause the first impression to thicken more than the width of a 1-pt. face rule.

It was the speaker's opinion that present-day three or four-color offset printing is equal in color effect to 10 or 12 colors executed by the older process of lithography. From the standpoint of the press builder it appears presses have been perfected by the manufacturer to a greater extent than the process itself. The recent development of transferring sheets from one cylinder to another may be accomplished any number of times without loss of register.

E. F. Bearce, Vice President in Charge of Development for the Chillicothe Paper Company, Chillicothe, Ohio, spoke on the subject of paper for offset printing purposes. In the past few years it has been determined that paper used in offset printing must have three major qualifications: (1) It must lay flat without distortion; (2) Printability, and (3) Must be able to take several runs through the press. A common cause of distortion is that the package after being opened is exposed to the atmosphere, which causes the edges to dry out and become scalloped in shape. The speaker suggested that waterproof wrappers be permitted to remain about the package as received until the paper is to be used. Printability is a problem of proper ingredients used in paper making. The ability of the sheet to take register is a question of expansion or contraction of the paper due to giving off or the absorption of moisture. Paper should be conditioned from 5% to 8% above relative humidity of pressroom. The speaker felt that while the manufacturer should feel responsible for delivery of properly conditioned paper to the printing plant, the condition of paper in the printing plant is a responsibility of the printer.

In the discussion following Mr. Bearce's talk, and in response to a question asked from the floor by Craftsman Michelson of Minneapolis, it was brought out that one company has been furnishing waterproof and airtight covers which could be placed over skidded paper after each printing.

Chairman Freedman remarked that the lack of standardization is hampering the further development of offset, especially with reference to the making of deep-etch printing plates and that he would welcome suggestions from the audience to assist in bringing about standardized methods.

B. Offen, of B. Offen Company, Chicago, spoke on humidity control in the printing plant. Elimination of static can be partially accomplished by proper control of humidity in the pressroom because moisture in the air and paper act as conductors of electricity. Neutralizers can be used to eliminate balance of the static. After discussing the benefits of humidity control, Mr. Offen described various kinds of control equipment. He stated that washed air is the superior method because pressrooms need ventilation and should have uniform humidity at all times. The pressman himself needs fresh air. Paper storage rooms, however, need not be air conditioned. In closing, Mr. Offen suggested to those who were contemplating the construction of new plants that if a steel roof were to be put on the building it should be insulated to prevent the transfer of coldness to the pressroom as well as to prevent moisture condensation and the resultant dripping in unexpected places.

Press Work Clinic

J. Gus. Liebenow in his talk on "Pre-Makeready" said that pre-makeready may also start in the pressroom. Seldom do pressmen check up on their presses in advance. Presses should be checked up during the slack periods by a competent press machinist. This will insure everything being in readiness when the rush jobs come.

The use of plates and solid base equipment will help materially. Wooden bases are obsolete and have always been the source of much trouble for the pressman.

Frank E. Wagner, Warren Paper Mills, addressed the section on the topic of "Inks." Among his remarks he stated that a check up of 885 black inks made by the Warren Paper Mills Research Laboratories disclosed the fact that this great number might be reduced to a few standard inks; that is, one for dull-coated papers, one for gloss coated papers, one for antique stock, etc.

Ninety per cent of the complaints made about poor printing, he stated, may be credited to faulty ink application to the paper stock. Ink is not always to be blamed, however; the fault may lie in the rollers, atmospheric conditions, ink doping and faulty plates.

Recently, the Warren Company conducted an investigation to determine why inks skidded on glossy papers. It was found that when the ordinary book or halftone inks were used, the tendency was that the inks squeezed out on the halftone dots, causing the picture to appear gray. In order to make the cut appear darker in the solids, pressmen were forced to run a heavier film of ink which resulted in smudging and offsetting.

The experimenters started with a dull ink printed on gloss coated paper and discovered that they obtained good results. An ink formula containing one-third dull black and two-thirds non-scratch hard black was the combination found to be best suited for glossy papers. Practically all ink manufacturers produce black inks of these proportions and market them under trade names and designated formulas.

Dave Rappaport, of the Chicago Roller Company, was next called upon by the Chairman to speak upon the topic of "Rollers." Rapid strides have been made within the past few years in the making of synthetic rollers. He stated that formerly rubber rollers contained 7% rubber and 93% compounds. The new roller in reality contains but very little rubber. Synthetic rubbers marketed under the trade names of "DuPrene" and "Glyptol" have enabled the roller makers to develop serviceable rollers which will not melt under high pressroom temperatures, nor will they swell from contact with oils and other greasy compounds contained in the inks. The cost of the synthetic roller is approximately four times that of the composition roller, but the difference in cost, Mr. Rappaport stated, has been more than compensated for in the roller mileage obtained.

Mr. Rappaport stated that synthetic rollers, when used as form rollers, gave a sharper dot and that it was not necessary to use composition rollers in combination with synthetic rollers as form rollers but that synthetic rollers might be used exclusively with entire satisfaction.

When asked as to the advisability of using synthetic rollers on fast rotary presses, he stated that one Chicago firm doing catalogue work now employs 3500 such rollers on its presses. This firm has records showing five years of life for these rollers at the present time.

Ollie Watson, Toronto, was called upon to show samples of work produced by the "Delcate" plate process. After 20 years of experimental work this type of plate has been developed within late years to the point where it is now commercially successful. The plates are manufactured in England to these specifications: 11-points thick, 26 in. by 40 in., pure white, harder than rubber and softer than metal. They can be used on patent bases or nailed to wooden blocks. It is claimed

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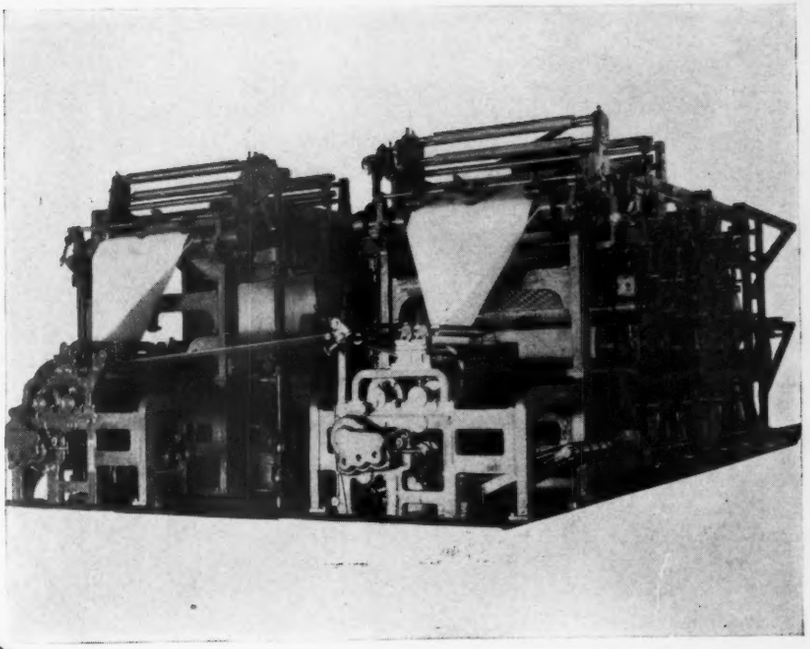


SKF-EQUIPPED
BUILT BY
THE DUPLEX
PRINTING PRESS
COMPANY

THE HIGHER THE SPEED

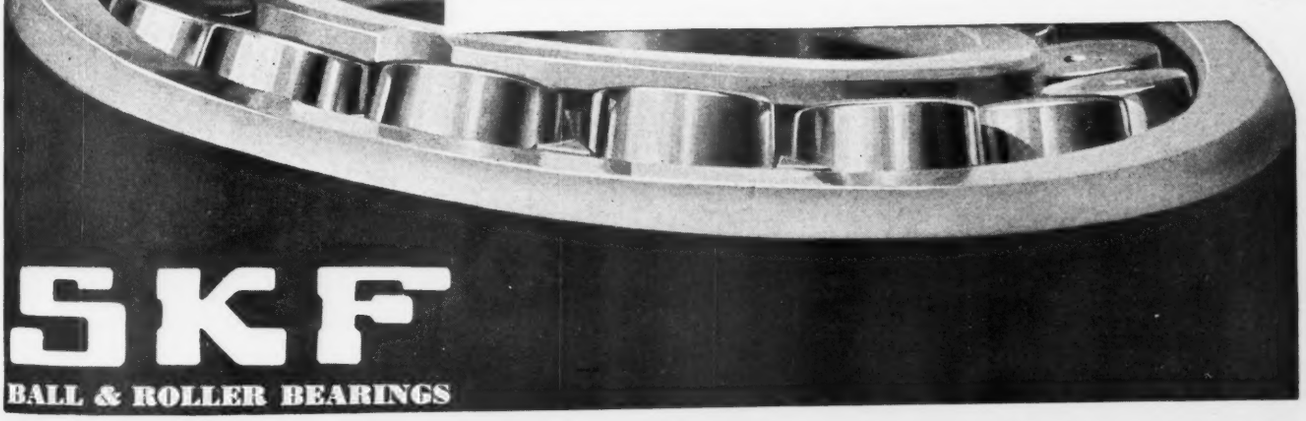
the greater the need for SKF *in folding units*

Traveling at terrific speeds, paper disappears into the maze of whirring wheels of this Duplex Unitubular. It comes out cut to the exact register, uniformly folded, and ready for delivery—with vital rotating parts moving efficiently upon SKF Bearings.

By giving dependability to delicate parts of this folding unit, SKF make high speeds possible. By their unvarying accuracy, they help *maintain* high speeds without showing noticeable wear. By never needing adjustments and requiring only occasional lubrication, they reduce operating costs to a minimum. In fact, SKF give this machine the same dependable performance they've given to printing machinery of all kinds since they pioneered in 1915.

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

3681



SKF

BALL & ROLLER BEARINGS

New Things for Progressive Printer

New Model "K" Form-O-Scorch

The demand by stereotyping executives for a heavy-top flat mat-scorching machine has been met by the American Publishers Supply who now announce a Sectional Top Model "K" Flat Form-O-Scorch. Manufacturer states that a mat formed and scorched in the new machine has all the merits of one prepared in a steam table.

A distinguishing feature of the new scorcher and forming machine is a sectional cover weighing 200 lbs., which, working in conjunction with electrical heat, provides a positive means for sorching mats efficiently

View of Model "K" Flat Form-O-Scorch. The cover weighs 200 lbs. and the sections are raised and lowered successively by a counterbalanced cam-and-lever mechanism. The action of lowering the cover sections one at a time smooths out the mat with the same action as when smoothing out a mat with the hand.

and without distortion of any kind within the mat area.

Since it would be difficult to raise and lower a heavy cover, the designers have developed the sectional top. The cover is provided with eight sections which are lifted one at a time and in succession by the single movement of a cam-and-lever-mechanism. The blanced lever enables the operator to raise and lower the cover sections without muscular exertion.

Another feature of the sectional cover (in addition to the extra weight which gives heavy and even forming pressure) is that the sections, in falling down from left to right, smooth out the mat with the same action as when smoothing out a mat with the hand.

Bearers about the outside frame of the drying surface do not permit the full weight of the cover sections to rest on the mat. The bearers sustain the sections just high enough above the mat so as to exert the greatest amount of pressure of the heaviest packed portions of the mat. The surface cushion of the drying space will not injure the face of the mat because the table top is provided with an asbestos pad. The pad drops on the mat when the first section of the cover is lowered and is lifted off by the last section when the cover is elevated. The pad has been removed in the accompanying halftone to illustrate more clearly the construction of the sectional top.

The scorcher has been fitted with a maximum heating area of 20 in. by 26 in. and is equipped with five 26-in. flat General Electric heating units so arranged as to give uniform heat over the entire drying area. A three-heat Hart & Hegeman electric control switch provides for high, low and medium heat.

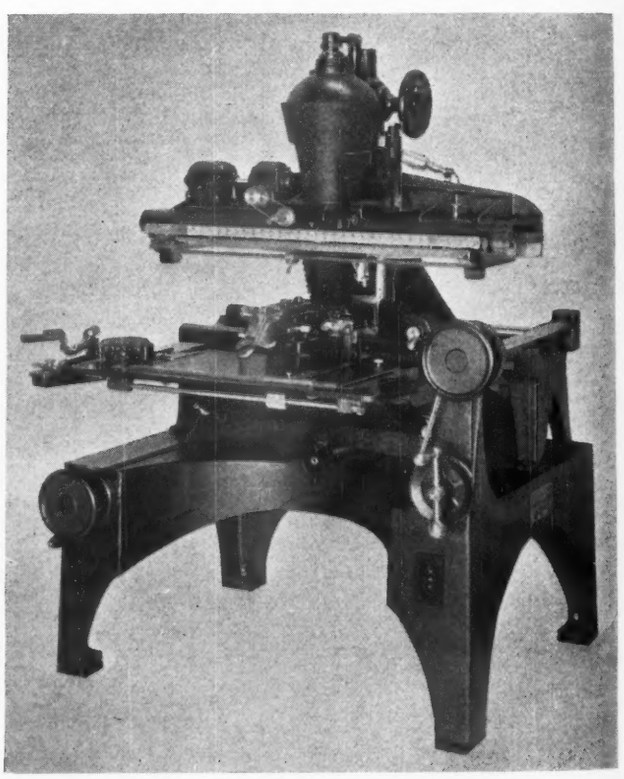
The machine is constructed entirely of steel and weighs 450 lbs. It occupies 3 sq. ft. floor space and stands 34 in. high.

Further particulars may be obtained from the American Publishers Supply direct or you may address your inquiries to the manufacturer in care of *Printing* EQUIPMENT *Engineer.*

Photo-Letter Composing Machine

The Rutherford Machinery Co., Div. General Printing Ink Corporation, announces a new Photo-Letter Composing Machine which is designed to handle composition of the type that would ordinarily be hand lettered, hand engraved or hand set. Photo-lettering is a new process by which photographic images of individual letters and designs are composed into words or patterns upon sensitized film, paper or dry plate. It is not designed to compose page after page of continuous text matter.

Instead of using type or matrices, the photo-lettering process uses master plates for photographic repreduction of the letter patterns. These are of glass and have on them complete alphabets, numerals and points. The background of these glass plates is opaque and the characters are transparent. Light is projected through



View of Rutherford Photo-Letter Composing Machine

The Hoe Contribution to CRAFTSMANSHIP

As indicated by their presence at the Convention, nothing has more importance for the Craftsmen than the development and discovery of ways and means to perfect the production standards of the Graphic Arts.

In keeping with this progressive spirit, Hoe never relaxes its engineering effort on behalf of mechanical improvements that will elevate printing quality, make the day's labor less strenuous, or promote personal safety for the operator. As quickly as they reach a practicable condition, these improvements are found incorporated in all Hoe Presses. They extend from the great Hoe magazine, rotogravure and newspaper presses . . . through the Hoe line of Super-Offset Presses . . . to the Hoe Sheet-fed Rotaries and the complete Hoe line of plate-making machinery.

This isn't news for the experienced craftsman who has worked with Hoe Presses, who has watched the mechanical developments of the past twenty years fostered and pioneered by Hoe. He will agree with countless other craftsmen that "Hoe Builds the Best."

R. HOE & Co., Inc.

• General Offices •
910 East 138th Street
(at East River)
• New York City •

BOSTON SAN FRANCISCO CHICAGO

the transparent characters to a sensitized film, paper or dry plates in the machine.

The machine photographically assembles letter images (or ornamental units) composing them into a finished photographic plate of the entire composition. The machine is esentially a projection machine, in which the master plates are the slides and the work plate and operator's table are the screens on which the pictures are projected.

Operation of the machine is as follows: Into the selector carriage is placed a master plate bearing the desired style of alphabet. The plate travels back and forth before the aligning point under semi-automatic control. The light passing through the transparent letters and the lenses and prisms brings the letters into full view upon the guide-sheet on the operator's table.

THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK NORMAL
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK
THE FIRST NATIONAL BANK

Reduced reproduction from original specimen made on Rutherford Machinery Company's new Photo-Letter Composing Machine to show the range of extended and condensed letters which may be secured from one master plate bearing the letter characters for reproduction on sensitized film, paper or dry plate. The center line represents normal reproduction exposure which in the original was 18-pt. These specimens were secured by using the distortion device on Focus No. 11 only.

When the desired character is in position the operator exposes its image directly on the work plate which is enclosed completely and is light-proof. Manipulation of the machine is in full light where the operator can visually control the whole mechanism. He uses a layout (also made mechanically on a layout spacer) and guides the movements of the characters so that they are placed precisely where he wants them.

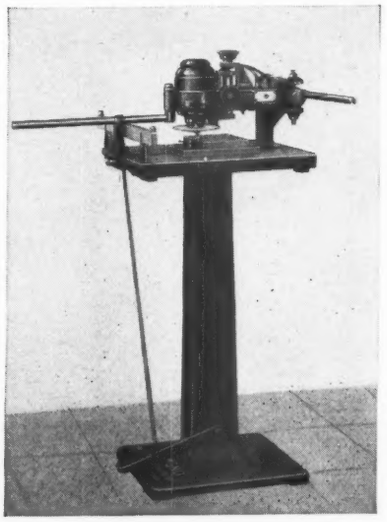
The light passing through this master plate is controlled by the operator by means of a system of refracting an optical lenses, so that he may enlarge them to giant headline sizes or reduce to small text (variations from 5 to 192 points in size); condense them, expand them or change to italics. In addition he can stipple, screen, overlap, shadow, pattern or superimpose them.

The guide sheet placed on the operator's table carries indicators for positioning the letters, justifying, centering, expanding, condensing, etc. A touch of the operator's fingers on the key controls moves each letter into the desired position, automatically letterspaced or justified, and at the same time exposes it on the sensitized work plate. In this manner the operator exposes one character after another until the job is complete. The film or paper is then removed through a dark room connection and developed.

If sensitized paper instead of film is used as a work plate it can be submitted to the customer as the proof. In the case of sensitized paper, hand decorations can be added directly to the paper before submission.

The process covers a wide scope of letter images and decorative material. Borders, backgrounds and repeated designs may be stepped up or down. Individual designs may be drawn and used in great variety. Entirely new alphabets can be furnished. The manufacturers state 250 different alphabets are now available.

The photo-lettered film or picture can be used to make offset press plates, zinc line cuts, steel or copper intaglio plates or gravure cylinders.



View of Hammond Radial Type Floor Router and Router Planer.

Hammond Floor Router and Router Planer

The Hammond Machinery Builders, Inc., announces a new floor router and router planer, to be known as Model R-2. The manufacturers state this machine is equipped with adjustable clamps for both type high and shell casts, router bits, chuck wrench, lighting fixture, "See-thru" chip guard, type high gauge and necessary wiring. In addition, a type high planing plate, planing tool and clamps are included.

It is of the radial arm type, full width adjustable arm support and guide, with convenient foot pedal control. Fine balance of entire motor and spindle unit makes for quick responsiveness to operator's touch. The ½ h.p. motor is of the high-speed, ball-bearing, universal type, totally enclosed with exception of two screened air vents.

Available as a router or a router-planer, and eqipped accordingly, in either bench or floor model. Size of table, both models, 20 in. by 22¼ in. Speed of spindle 12,000 r.p.m. Further information may be obtained by addressing the manufacturers direct or in care of *Printing* EQUIPMENT *Engineer*.

Pedestal Motor Drive Lathe

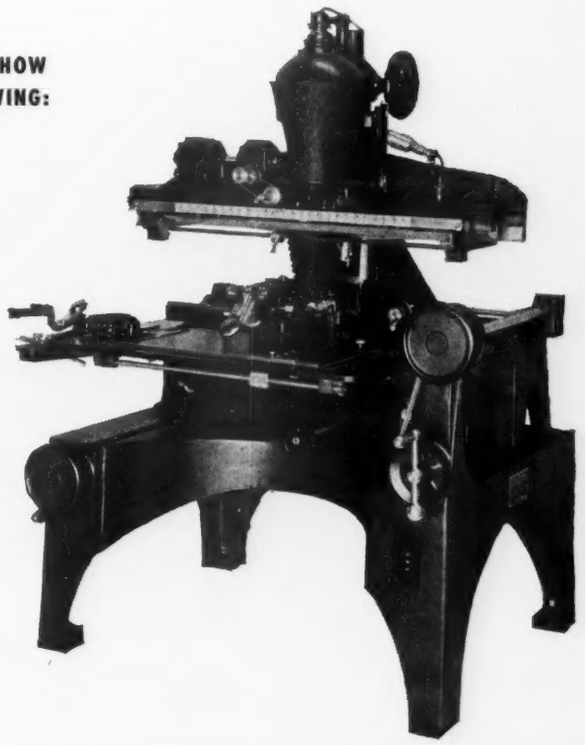
The South Bend Lathe Works, South Bend, Indiana, announces that the new 1936 Model 9-inch Workshop Lathe for printing plant maintenance work may now be had with the new Pedestal type of Motor Drive. The Pedestal Motor Drive mechanism is a separate unit mounted on a metal pedestal back of the lathe. A belt tension release lever attached to the tension brace permits easy shifting of the guarded cone pulley V-belt from one step of the pulley to another.

On the new lathe are featured ten new improvements, among which are: The new twin gear reverse for right and left-hand threads and feeds, a ball thrust bearing on the headstock spindle, larger spindle bearings adjustable

(*Continued on Page 50*)

ASK YOUR RUTHERFORD REPRESENTATIVE TO SHOW YOU PHOTO-LETTERED SAMPLES OF THE FOLLOWING:

ADVERTISEMENTS...produced by p
ALL-OVER BACKGROUNDS...pr
ANNOUNCEMENTS...produced by p
AIR BRUSH TITLES...produced by
ART COMPOSITION...produced by
BANK STATIONERY...produced by
BOND BODIES..produced by photo-
BOTTLE CAPS..produced by photo-
BORDERS..produced by photo-letteri
BROADSIDES..produced by photo-l
BUSINESS CARDS..produced by p
CAN DESIGNS..produced by photo-
CALENDARS..produced by photo-lett
CAR CARDS..produced by photo-lett
CARTONS..produced by photo-letterin
CHARTS produced by photo-lettering
CHECKS...produced by photo-lettering
CONDENSED LETTERING..prod
DECALCOMANIAS..produced by ph
DIPLOMAS..produced by photo-letter
DIRECTION PANELS produced b
ENVELOPE IMPRINTS produced
EXPANDED LETTERING...produc
FORMS & FOLDERS...produced by
GREETING CARDS produced by p
HEADLINES..produced by photo-lett
INVOICES produced by photo-letteri
JUMBO LETTERING..produced by
JUSTIFIED LINES produced by ph
LABELS..produced by photo-lettering
LETTERHEADS produced by photo-
MONOGRAMS produced by photo-l
MOVIE TITLES..produced by photo
MULTIPLE NEGATIVES..produce
NAME PLATES..produced by photo
OBLIQUE LETTERING...produced
PANTOGRAPH TINTS..produced
POSTERS..produced by photo-letterin
REVERSED LETTERING..produc
ROTOGRAVURE LETTERING..p
SHADED LETTERING..produced
SPECIAL DESIGNS produced by
STEEL & COPPERPLATE WORK..p
STEP-AND-REPEAT..produced by
STOCK CERTIFICATES produce
STORE STREAMERS..produced b
TEXTILE DESIGNS produced by p
TICKETS produced by photo-letterin
TITLE PAGES produced by photo-l
TRADE MARKS...produced by phot
TRANSPARENCIES...produced by p
TUBE DESIGNS...produced by phot
WRAPPERS...produced by photo-let



THE RUTHERFORD PHOTO-LETTER COMPOSING MACHINE is the newest application of photography to the Graphic Arts. This machine, by assembling and exposing letter-images on film, produces work with the precision and flexibility of the finest engraving, hand lettering or hand typesetting. ✦ A glance down the column at the left shows you what the machine can do. Check the list and return it to us. A Rutherford representative is ready to explain the many ways in which you can use this profitable new process.

RUTHERFORD MACHINERY COMPANY

DIVISION · GENERAL PRINTING INK CORPORATION
100 SIXTH AVE., NEW YORK · CHICAGO · LOS ANGELES · CINCINNATI

THIS ENTIRE ADVERTISEMENT PHOTO-LETTERED ON THE RUTHERFORD PHOTO-LETTER COMPOSING MACHINE

View of Iron Fireman Stereotype Metal Pot Stoker in Plant of Kalamazoo (Mich.) Gazette.

Stoker

With Control Keeps Constant Metal Temperature Under Stereo Pot

By Staff Writer

PREVIOUS to the installation of an Iron Fireman Stoker, in the plant of the Kalamazoo (Mich.) *Gazette*, the five-ton Goss stereotype pot had been heated by hand-fired coal. Despite the low cost of operation by this method, it was felt a further saving could be made by a stoker installation, and in addition the accurate metal temperatures which are obtained by the use of oil, gas or electricity could be secured.

Since the installation of the 30-lb.-per-hour stoker, a careful record of coal consumption and metal turnover has been kept for a 31-day period[1], as follows:

Amount of stereotype metal heated	82,565 lbs.
Stoker coal used	3.15 tons
Cost of stoker coal — $5.75 per ton	$ 18.11
Estimated cost of electricity for motor, 20c per ton	$ .63
Total cost of stoker operation	$ 18.74
Coal used previously	4.33 tons
Cost of coal $8	$ 34.66
Saving on coal cost per month	$ 15.92
Saving on coal cost per year	$191.04
Cost of stoker and installation	$345.00
Bristol Control for stoker	$125.00
Total installation	$470.00

In addition to the above savings effected by stoker installation, it has been found possible to keep the metal temperature within 10 deg. variation. An extreme variation of 20 deg. has been noted during the casting of a large number of plates on the heaviest days. The Bristol Control permits setting the temperature at any point desirable which is maintained automatically in the stoker. Metal temperature is reduced from an operating temperature of 620 deg. to 500 deg. at night. This heat loss can be replaced in approximately a half hour. Due to the accurate control of heat, it is anticipated that a considerable saving on dross will also be effected, but no figures are yet available. Cleanliness and convenience are practically equal to other forms of automatic heat. The closed hopper is fitted once each 24 hours by the janitor at night, and a small amount of ash is removed once daily in the form of clinkers.

As a matter of comparison, it was found during the same period outlined above that 33,475 lbs. linotype metal were remelted by gas. This required 35,000 cu. ft. of gas at a cost of $36.50

(Supplemental data on operation of Iron Fireman Coal Stoker in plant of Kalamazoo (Mich.) *Gazette*, as of May 23, 1936)—Since the stoker has been in continuous operation now for approximately nine months, and with the exception of a minor interruption due to a rag in the coal which cut off the coal feed, no difficulty has been experienced in its operation.

Further use has demonstrated, due to the reliability of the stoker in maintaining the proper temperature, it is unnecessary to build up higher metal temperatures in anticipation of a heavy draw-down on heavy production days. The stereotype foreman is now operating at approximately 600 deg. metal temperature which should result in a further saving of dross.

By maintaining a slightly deeper fire bed, the necessity for removing ash in the form of clinkers every day has been reduced to three or four times per week. Approximately one-half bushel of clinkers are now removed from the ash pit at each cleaning.

[1] This report is dated October 6, 1935.

Books Received

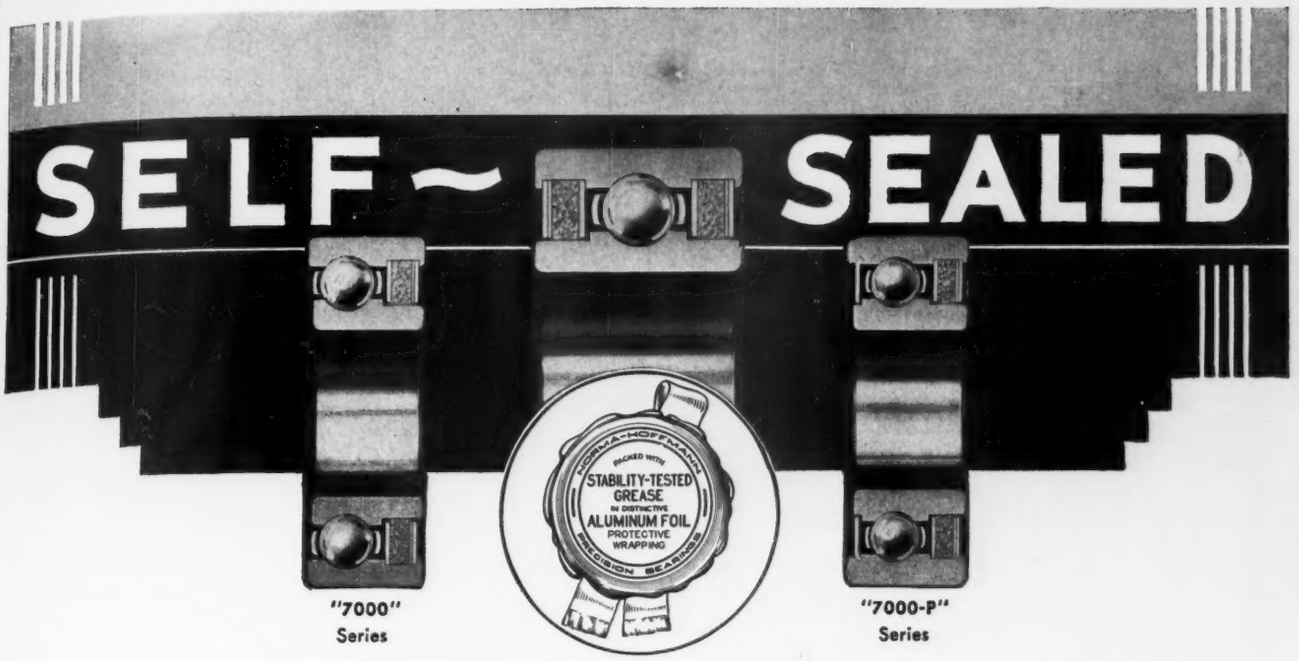
Historical Treatises, Abstracts and Papers on Stereotyping

THIS book, by George A. Kubler, L.L.D., is supplemental to Dr. Kubler's previous book, "Short History of Stereotyping," published in 1927. Included in the book with suitable comments and notations by the author, are two treatises on stereotyping methods and inventions published over one hundred years ago. The one by Armand Gaston Camus, French statesman, on the history and processes of polytyping and stereotyping, is translated from the French for the first time. The other treatise by Baron van Westreenen van Tiellandt of Holland, is translated from the Dutch into English for the first time. Other abstracts and papers are included, among which are a reprint of the original biography of William Ged, a report on the stereotyping process of the Alsatian master printer Herhan and a reprint of a paper by Lieut.-Gov. Dr. Colden, sent to Benjamin Franklin and published in the *American Medical and Philosophical Register* in 1810. The latter reprint by Dr. Colden refers to a new method of printing discovered by the writer. A reply from Dr. Franklin follows immediately after.

Biographical data by the author is supplied throughout the book.

Dr. Kubler's book is welcome indeed, inasmuch as very little has been published, which is available to the present generation of master stereotypers and mechanical executives in general with respect to the origin and history of the Stereotyping Art.

"Historical Treatises, Abstracts and Papers on Stereotyping," by George A. Kubler, L.L.D. Printed from stereotype plates by J. J. Little and Ives Co., New York, and distributed through the Certified Dry Mat Corporation. Bound in blue boards, 170 pages, 6¼ in. by 9¼ in.



SUPERIOR

BECAUSE OF THE FOLLOWING ADVANTAGES:

Thick, closely-fitting felts, providing extra protection.

Effective labyrinth formed by felt seal and plates against recessed inner ring.

Felt seal removable in its entirety—for inspection, cleaning or renewal of grease.

Felt seal entirely within confines of both rings and therefore not exposed to injury.

Seal construction avoids race distortion, assuring dimensional exactness and quiet running.

Wide, solid inner and outer rings with maximum contact on shaft and housing, making inserts in housing unnecessary and militating against slippage, looseness and escape of lubricant past outer ring.

Grease capacity ample for long periods of service.

Write for the Catalog describing the Most Complete Line of Self-Protected Bearings in America. Let our engineers work with yours.

"NORMA-HOFFMANN"

PRECISION BEARINGS

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN. U.S.A.

ERNST LENSIC
SCREEN PRINTER

Supplemental to the article on the Ernst Lenticular Screen which appeared in the July issue, we are showing here view of Printer for use with Ernst Lensic Screen in plant of the Horn & Norris Company, Cleveland. On the table top will be seen the vacuum printing frame. Underneath is the mechanism for drawing the vacuum. Overhead is the canopy from which four special-type lamps are suspended for obtaining the necessary dot formation when used in conjunction with the lensic screen. The first switch at the left illuminates a single lamp while the second switch illuminates the remaining three lamps. The switch at the right sets in operation the vacuum apparatus.

Offset?

What to Do Answered by Improved Spraying Processes and Quick-Drying Inks

By ROBERT F. SALADE

WITH the constantly increasing demand for multi-color and process-color printing, halftone work, varnish jobs and the heavier kinds of printing in general, it became necessary for letterpress printers to seek economical means of preventing ink offset. The obsolete methods of slipsheeting, traying, winding and doctoring inks were, and still are, highly expensive. Slipsheeting also has the disadvantages of scratching the surface of freshly-printed sheets and of sticking to them. Many different types of compounds and driers were mixed with the inks, in an effort to eliminate offset, but often these substances affected the quality and color of the ink. This doctoring of inks is known as the "trial and error method," because the pressman cannot feel certain that it will prevent offset.

THE GRAMMER PROCESS

One of the first mechanical systems for preventing offset was the Grammer Paraffin Process, perfected originally for use on the Cottrell sheet-fed multi-color rotary presses. This process embodies an automatic machine by means of which paraffin, electrically melted, is sprayed on the printed sheet or web, after printing and before piling. As the particles of paraffin are chilled before coming in contact with the paper, they are deposited in the form of dust, and their action is mechanical, holding the sheets apart while the ink is drying.

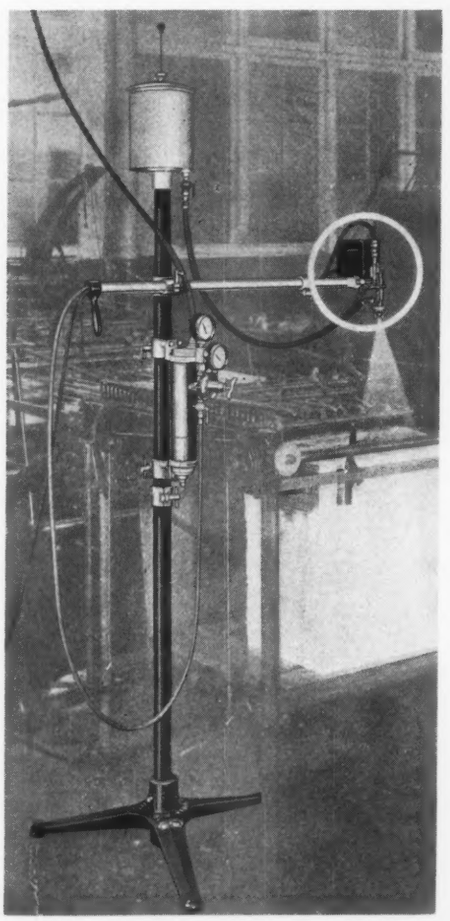
PAASCHE "NO-OFFSET" PROCESS

Another automatic spraying equipment, designed for use on many different kinds of printing presses, is that known as the Paasche "No-Offset" Process, manufactured in fixed and portable models by the Paasche Airbrush Company. This process, like that of the Grammer, has its own particular advantages in preventing ink offset. Its spray, however, does not consist of paraffin, but is derived from a special compound. The transparent particles of the solution have no effect on a subsequent impression because they dissolve when touched with ink, lacquer or varnish, without altering the appearance of the covering agent.

SPRAYOMATIC NON-OFFSET UNITS

During the last year, two new makes of non-offset units have been placed on the market. One of these is a device called the "SprayOmatic," developed by the DeVilbiss Company, assembled by the SprayOmatic Products Company, and distributed by the International Printing Ink Corporation. The other is known as the ATF Portable Non-Offset Gun, made by the Binks Manufacturing Company, and distributed by the American Typ Founders. Due reference is first made to the SprayOmatic which is supplied in a portable size for use on small presses, and in a semi-portable model for use on larger presses. The SprayOmatic process consists of a device which applies microscopic, bubble-like

(Continued on Page 46)



ATF Non-Offset Gun for preventing offset. The ATF equipment is portable.

PROFITS *in Color Printing*

BACKED BY EXPERIENCE

Nothing can take the place of experience. Most of the world's production of full-color printing in volume is done on Cottrell Rotary Presses. In designing and servicing such presses, therefore, the Cottrell organization has had more experience by far than any other manufacturer. Problems of ink distribution, register and impression, including the special problems involved in unusual service requirements, have been met and solved by Cottrell engineers since the very beginning of rotary press manufacture, in which Cottrell has always pioneered. Problems which today are still problems in some equipment were solved by Cottrell engineers many years ago and are no longer sources of trouble for users of Cottrell Presses.

Large profits are to be had today in full-color printing with dependable equipment. That is what we offer you in Cottrell Rotary Presses—with definite proof embodied in hundreds of printing machines in successful use throughout the world.

C. B. COTTRELL & SONS CO., WESTERLY, R. I.

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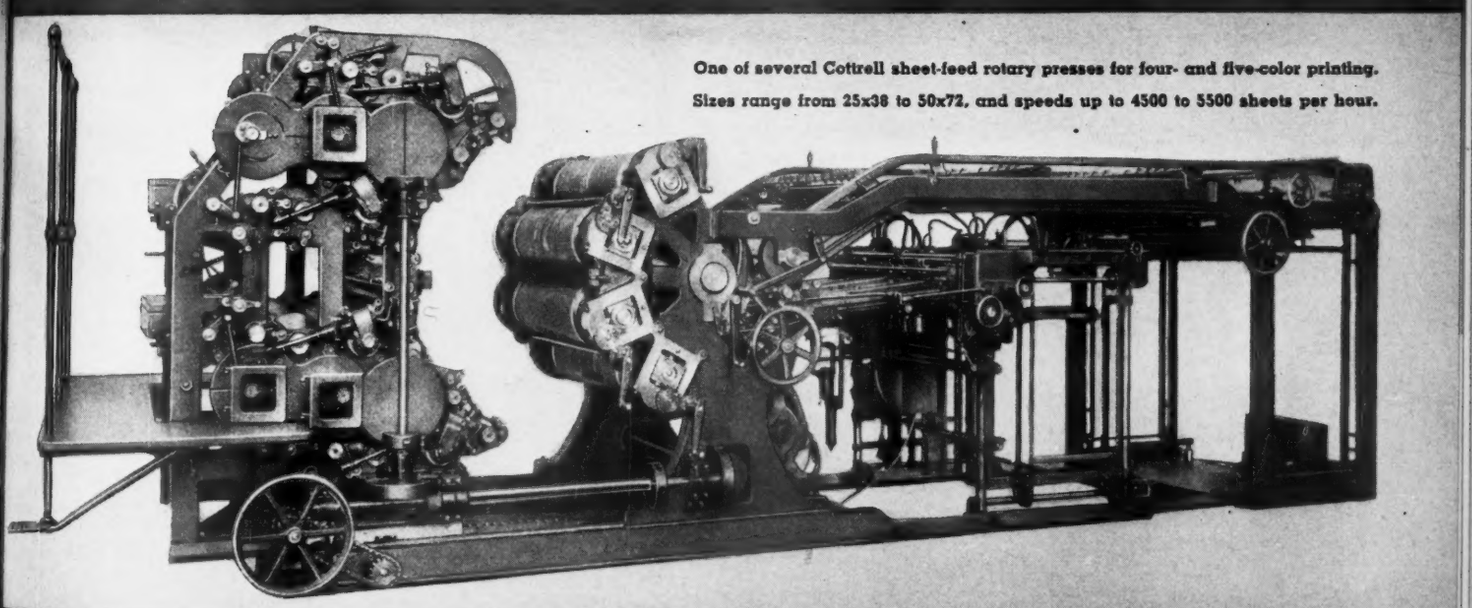
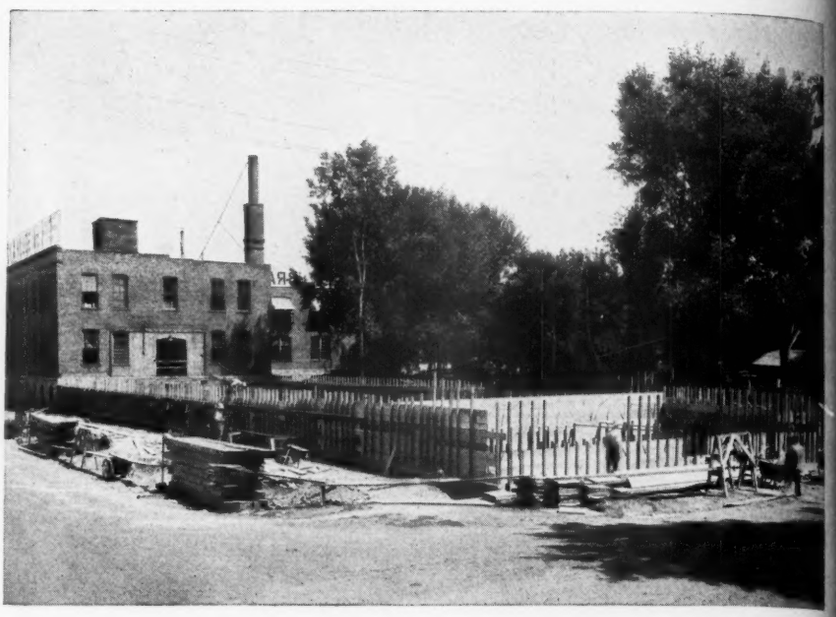


One of several Cottrell sheet-feed rotary presses for four- and five-color printing. Sizes range from 25x38 to 50x72, and speeds up to 4500 to 5500 sheets per hour.

COTTRELL

Brandtjen & Kluge Expand Factory Building in St. Paul



Starting in 1919 with the manufacture of the Kluge Feeder, Brandtjen & Kluge Inc., of St. Paul, Minn., found 5,000 sq. ft. ample space for production. Two years later, when the Kluge Feeder was becoming more widely used, manufacturing space was almost trebled, the whole building of 12,000 sq. ft. being taken over.

After a lapse of seven years, the firm moved farther out and purchased a factory building of 34,500 sq. ft. There the Kluge Automatic Press was developed. Its reception has been such that commencing last fall, every branch of production was put on a twenty-four hour basis.

This year, however, three shifts a day have proved insufficient to keep pace with the demand for the Kluge Press, as well as the filling of normal run of orders for Kluge and B&K Feeders, so the three-story building is being extended to the end of the block, adding 60% more space and furnishing a total area of 61,200 sq. ft.

This floor area does not take into account the production of iron castings, which are made outside of the plant. Brass, aluminum and the finer alloyed parts are cast in the factory.

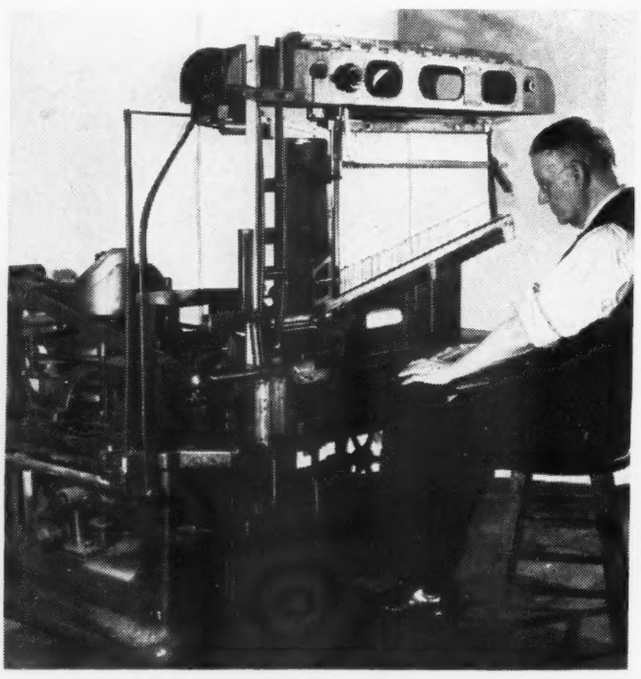
The firm owns additional property adjacent to the present building and is prepared for still further expansion.

Helped Initiate Linotype

Fifty years ago John T. Miller, at present a proofreader with the New York *Herald Tribune*, operated the first commercially successful linotype, in the plant of the New York *Tribune* on famous old Newspaper Row.

The accompanying picture, made recently at Brooklyn headquarters of the Mergenthaler Linotype Company, shows the veteran operator at the keyboard of the old "Blower" machine, which, on July 3, 1886, began producing composition for the New York *Tribune*—the first newspaper to be set by linotype.

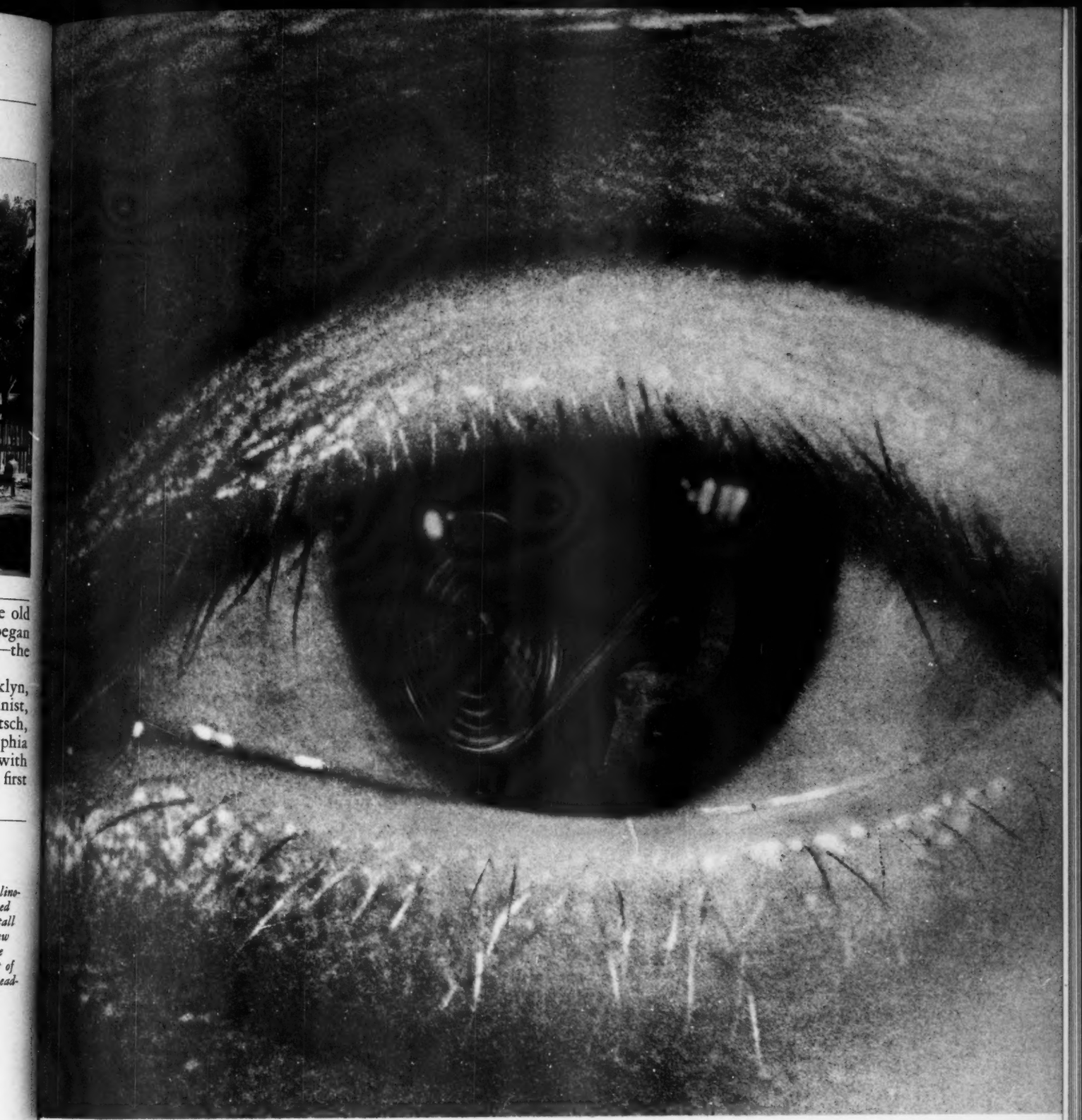
The other picture, also taken recently in Brooklyn, shows Charles W. Letsch, veteran linotype machinist, beside a bust of Mergenthaler, the inventor. Letsch, who has been head machinist with the Philadelphia *Record* forty-four years, and still is, started his trade with the inventor in 1880, and helped him install the first linotype.



Charles W. Letsch, first linotype machinist, who helped Ottmar Mergenthaler install the first linotype in the New York Tribune *plant, as he looks today, beside a bust of the inventor, at linotype headquarters in Brooklyn.*

Marks 25th Anniversary

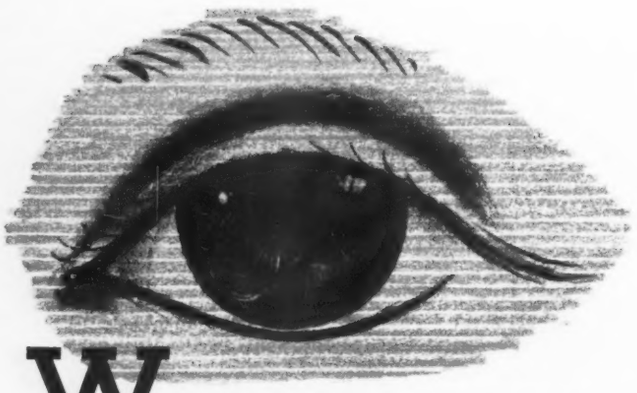
The Norma-Hoffmann Bearings Corporation—manufacturers of "Precision" Ball, Roller and Thrust Bearings—is celebrating its first twenty-five years of service to American industry. Founded in 1911 by Walter M. Nones, its President, the Company has pioneered in bearing design and now furnishes a complete line of Precision Ball, Roller and Thrust Bearings in inch and metric sizes. There are 108 distinct series, representing approximately 3000 types and sizes, listed in the current Norma-Hoffmann engineering catalog. The Factory and General Offices of the firm are at Stamford, Conn., with branches located in principal cities and distributors throughout the country rendering service to every phase of American industry.



THE CURE

that uncovered the ailment

A TRADE LINOTYPE MARK



LINOTYPE

WHEN we designed the Optic-Aid Front, we had no idea we were discovering the cure for an occupational eye trouble. We didn't even know the ailment existed.

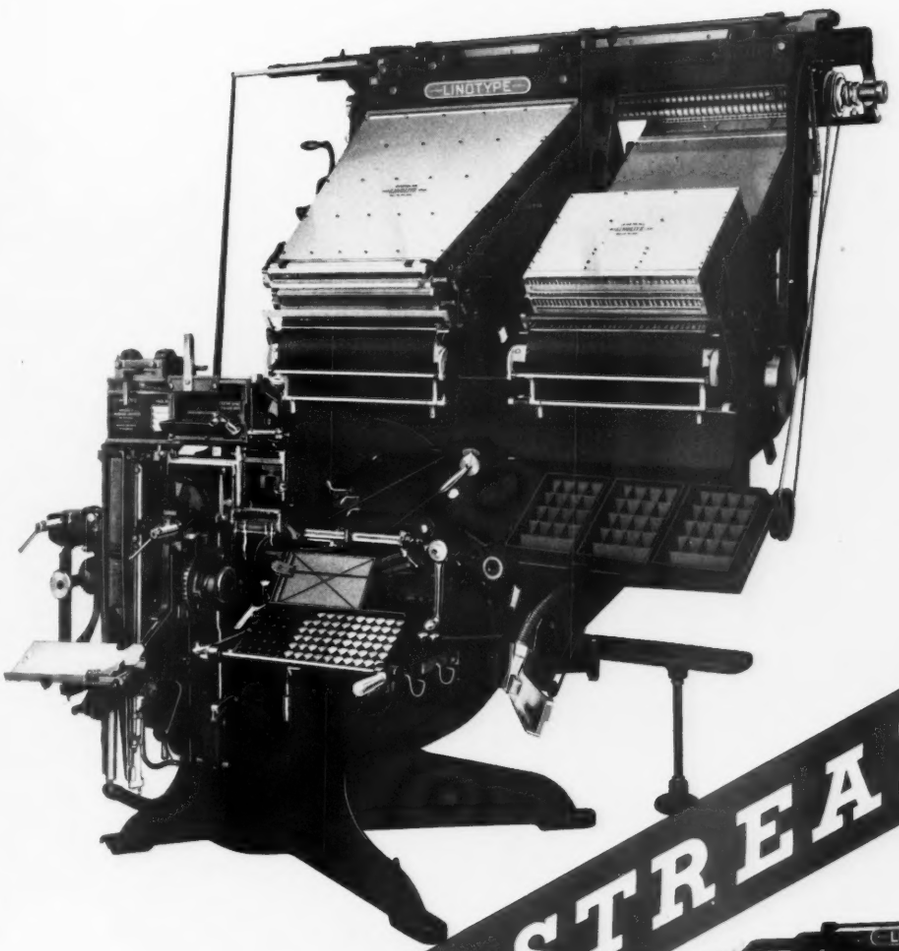
The Optic-Aid Front was an engineering idea . . . designed to increase production by removing a source of distraction and annoyance. We knew it would be easier on the operator's eyes. But up to that time we had never heard of a case of real eye trouble due to this cause.

Then the Blue Streak Linotypes were announced. Came a chorus of praise from operators. And from all over the country came reports of chronic eye trouble . . . often of many years' standing . . . that had been traced to the irritation of those exposed pulleys spinning in front of the operator's eyes.

With so many cases, it seems strange we never heard of it before. Linotype operators must be a long-suffering lot . . . and not given to complaining.

They never complained much about the labor of shifting magazines, either. But now that shifts can be made with one effortless turn of the handle, they are enthusiastic in acclaiming this feature, too.

Go over the Blue Streak Linotypes, detail by detail. You'll find 74 features that contribute to increased production, ease of maintenance, better appearance. See the Blue Streak Linotypes. Now on display at the nearest Linotype agency.

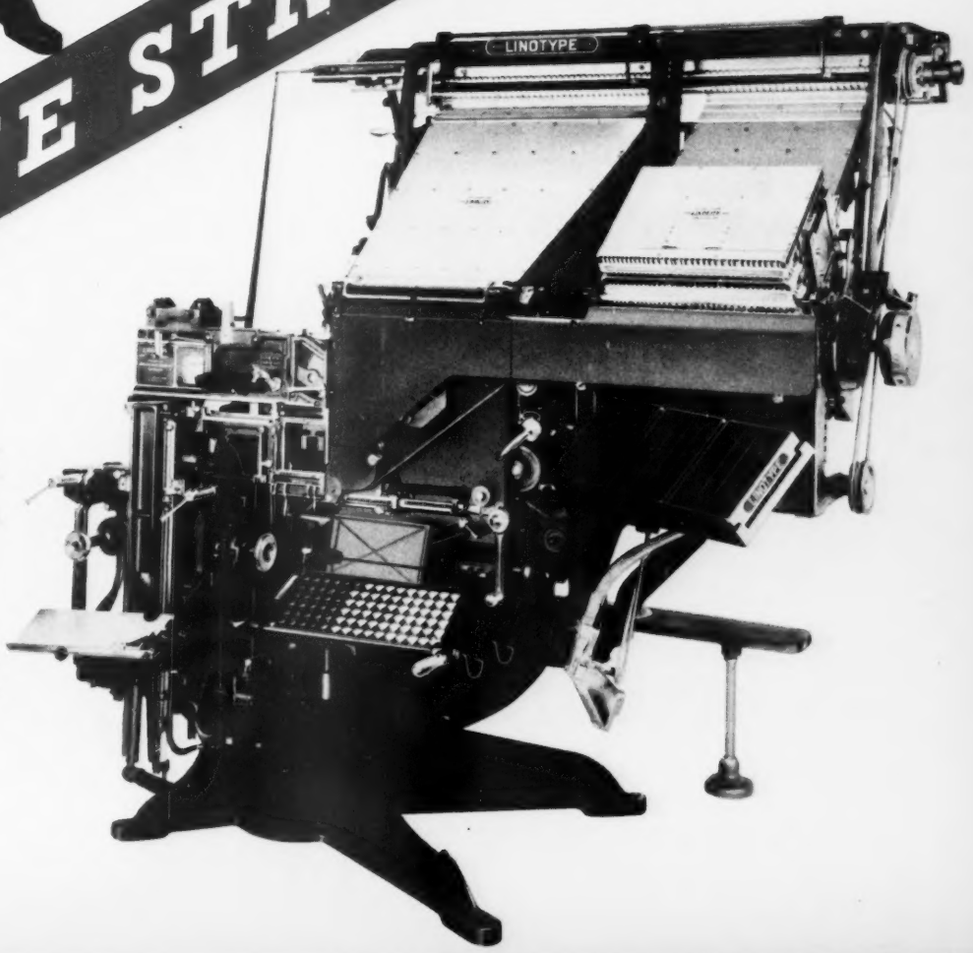


4-MAGAZINE

BLUE STREAK MIXERS

Model 29—4 Main Magazines
Model 30—4 Main Magazines
4 Auxiliary Magazines
Mixed composition from any two adjacent magazines.

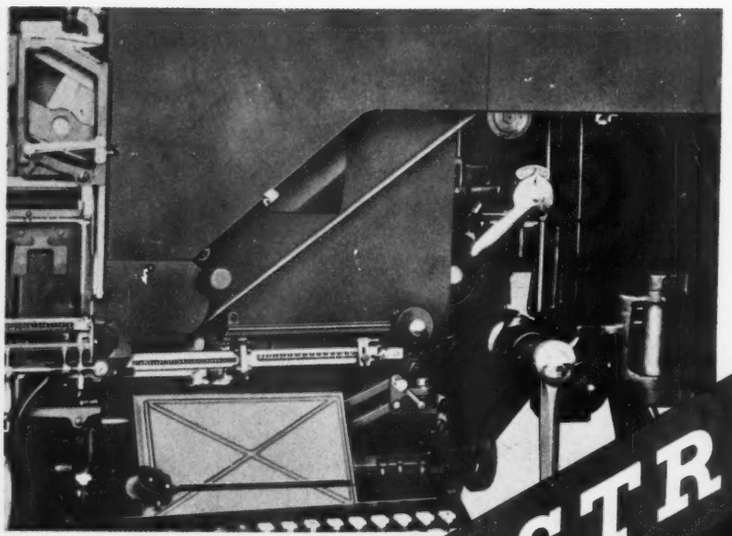
THE BLUE STREAK LINOTYPES



BLUE STREAK

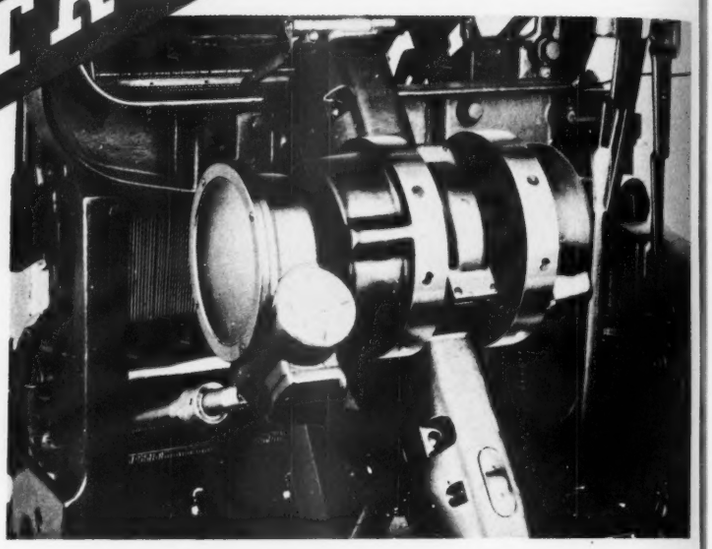
SINGLE DISTRIBUTORS

Model 8—3 Main Magazines
Model 14—3 Main Magazines
3 Auxiliary Magazines
Any of these models can also be supplied as Two-in-One or All-Display Linotypes.



This shows the Optic-Aid Front, the One-Turn Shift and the Unit Control lever which shifts the action of the handle from main to auxiliary magazines.

THE BLUE STREAK LINOTYPES



Here is the mechanism that makes the One-Turn Shift possible. Large, flat spiral springs counterbalance weight of magazines and supporting frames so that the lightest touch moves them up or down.

74 FEATURES OF THE BLUE STREAK LINOTYPES

Optic-Aid Front
One-Turn Shift
Swinging Keyboard
Unit Control
Revolving Channel Entrance Controlled From Seat
Improved Revolving Front Mechanism
Power-Shift on the Mixers
Universal Knife Block
Universal Ejector
Lock for Auxiliary Magazines
Control of Auxiliaries From Operator's Seat
Automatic Matrix Guard on Auxiliary Side
Front Removal of all Magazines
Six-Mold Disk (Optional Equipment)
Automatic Font Distinguisher
Direct-Line Assembler Slide Return
Improved Spaceband, 16% Stronger
Removable Double "e" Device
Vertical Mouthpiece Wiper
Down-Stroke Knife Wiper
Positive Slug Lever
Spaceband Pawl Clearing Device
Em, En, Thin Space Release
Auxiliary Line Safety
Blank Slug Device
New Pot Pump Plunger Sleeve
Water-Cooled Mold Disk
Quick-Change Liners
Sectional Distributor Bars
Improved Justification Bar and Brace
Oilers Added to Oil Holes
Sturdy Foundation With Extra Wide Base
Self Quadder (Low-Slug Quadding Optional)
Linolite Magazines
Wide Auxiliary Magazines
Self-Oiling Bearings
Universal Adjustable Copy Holder
Endless Matrix Delivery Belt
Composition Trays for Pi Matrices
Straight-Line Assembler Drive
Assembler Slide Anti-Friction Roller-Bearing
Two-Speed Distributor Drive
Assembler Slide Adjustable Clamp
Flexible Pi Tube
Quick Removable Keyboard Rubber Rolls
Complete Bank of Key Bars Removable as a Unit
Complete Set of Key Rods Removable as a Unit
Keyboard Cams Quickly Removable
Keyboard Rigidly Supported at Both Ends
Automatic Sorts Stacker
Keyboard and Spaceband Lock
Assembling Elevator Matrix Lug Supporting Rail
Adjustable Pot Leg Bushings
Adjustable Spaceband Key
Inclined Galley
Easy Adjustable L.H. Vise Jaw
Ball-Bearing Assembling Elevator Duplex Rails
Slow-Speed Assembler
Short Line Safety
Self-Adjusting Assembler Chute Finger
Delivery Slide Long Finger Hinged
One-Piece Matrix Retaining Pawls
Line Delivery Carriage Clamp
Elevator Transfer Slide Finger
Wide Quad Box
Adjustable Intermediate Channel Front Plate
Positive Spaceband Delivery
Hinged Assembler Entrance Cover
Composition Assembler Entrance Buffer
Distributor Shifter Slide With Cushion Spring
Second Elevator Guide
Anchored Channel Entrance Partitions
Automatic Distributor Clutch With Spiral Automatics
Lateral Adjustment of Distributor

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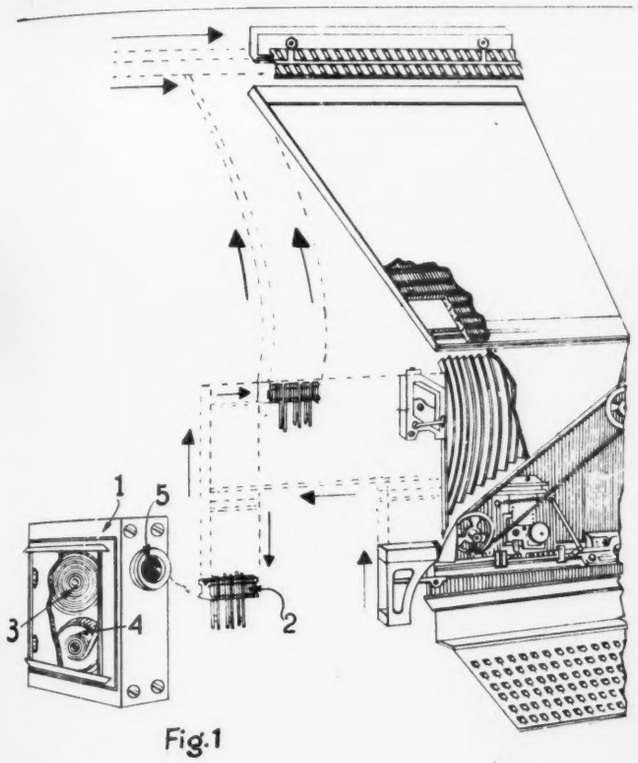

Fig. 1

Fig. 1.—General perspective diagram showing how the matrix storage, assembling, justifying and distributing means of a line-composing machine have been adapted for lithographic photo-composition purposes by Messrs. Friedman and Bloom of New York, New York. A camera 1 has been substituted for the usual casting apparatus, which photographs automatically the justified matrix line 2 upon a roll film 3 through the lens 4. The film on the feed reel 3 is wound as used on the pick-up reel 4 automatically. The camera shutter is synchronized with machine operation so that as fast as a matrix line 2 is justified between the vise jaws, the camera will be operated to photograph each line in succession upon the roll film. After the line has been photographed the matrices are carried to the distributor for return to the magazine in the conventional manner.

Photo-Composing

Type Matter Direct on Roll Film for Offset-Lith Object of New Mechanism

By Staff Writer*

WHAT is probably the first conversion of line-composing assembling, justification and matrix distributing mechanisms to purposes other than those for which originally designed, is incorporated in a lithographic composing and reproducing method devised by Samuel I. S. Friedman and Otto I. Bloom of New York, N. Y. These gentlemen recently were granted a patent upon the application of a machine for composing, justifying and distributing matrix lines in the same manner as employed on Intertypes and Lino-

*This discussion of the Friedman-Bloom Photo-Composing and Reproducing mechanism was prepared primarily from the patent sheets. An abstract of the patent (No. 1,042,041) appeared in the July issue of *Printing* Equipment *Engineer*, page 34.

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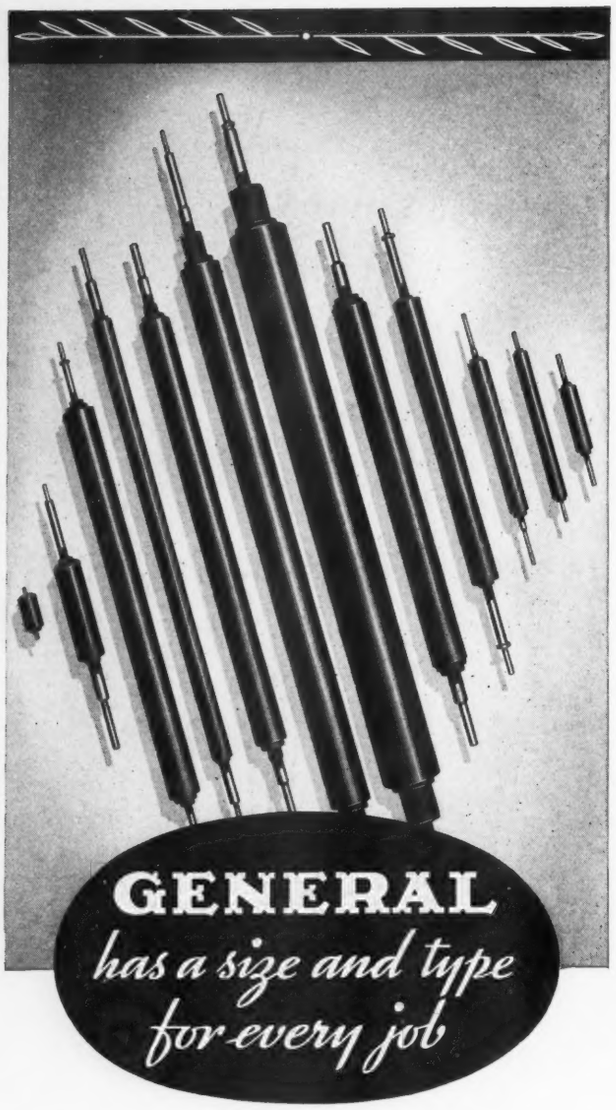

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General rollers are now widely used by newspapers, box and carton printers, lithographers and job press operators. It will pay you to investigate the money-saving features of General rollers and write for names of nearest dealers.

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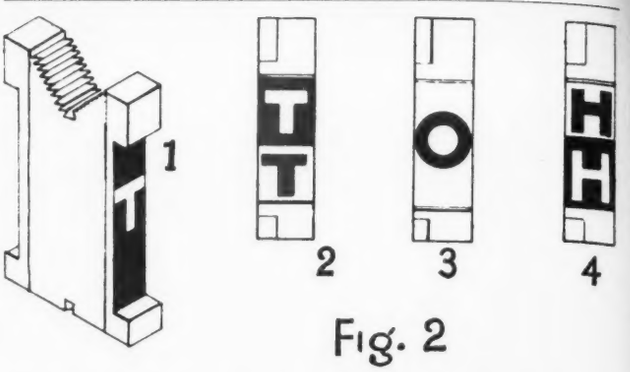


Fig. 2

Fig. 2.—At 1 is shown diagrammatic representation of a matrix with letter character in white on a black background as used in the Friedman-Bloom photo-composing machine. With the exception of the letter character which is on a slightly reduced plane surface, instead of intaglio form, the matrix, which it is intended to be made from aluminum, conforms in all other respects to standard line-casting matrices.

The conventional impression on negative film is secured by reproducing type characters as shown on this matrix. Since the characters appear in white on a black background, black letters on a clear background will appear on the negative film. A positive print secured from the negative film will reproduce with white letters on a black background.

At 2 is shown a two-letter matrix. The upper character might be called a "reverse" letter and the lower one a "normal" letter. In this way regular composition may be secured by using the lower character, or reverse composition can be secured by exposing the upper characters to the film from which the plate is made.

At 3 is shown the photographic edge of a one-letter matrix bearing a capital O in black upon a white background.

At 4 is shown a reverse arrangement of the letter characters as they appear upon the matrix at 2.

Novel effects can be obtained, it is claimed by the inventors, by interposing screens of various kinds between the camera lens and the matrix line, or by double exposure it would be necessary first to expose the film to the selected background and rewind the film before exposing the matrix line.

types in relief printing. However, in lieu of casting a slug from the justified matrix line by means of the usual mold, metal pot and molten metal, a camera containing a roll film of indefinite length is substituted for the casting apparatus. The justified matrix lines are photographed automatically on the roll film.

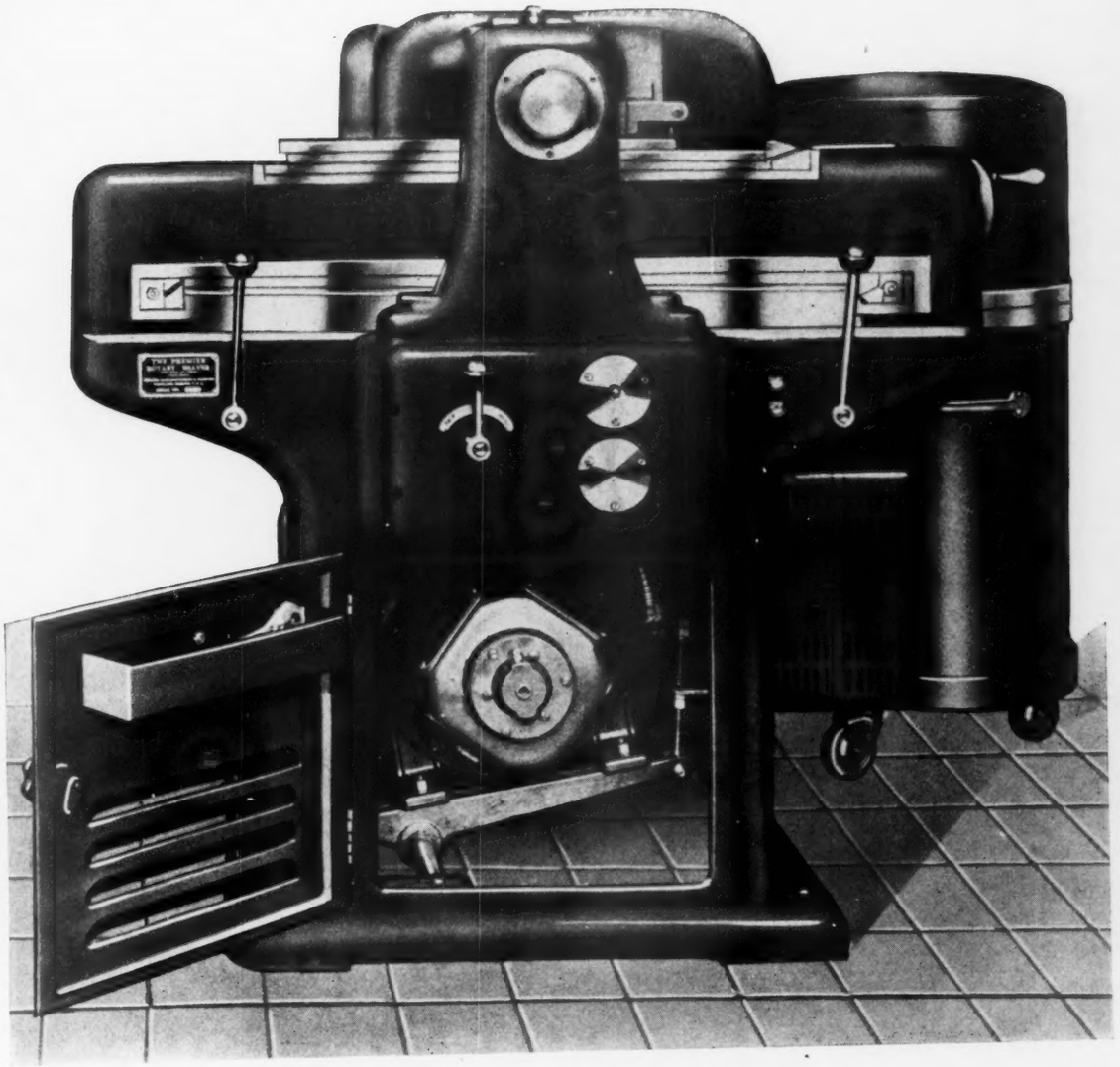
The object of the invention, of course, is to eliminate the present necessity for first composing and casting justified lines of type or slugs, and the taking of a proof of the matter by the letterpress method to be photographed upon a sensitive film for transferrance to the printing plate.

The inventors state the machine will enable the operator to set up lines and columns for immediate transfer to lithographic plates with a speed hitherto impossible; the size of the type may be varied at will by manipulation of the apparatus; varying letter designs and backgrounds may be secured by means of interposition of special screens, and type matter may be reproduced on photographic film, paper, or any other photographically sensitized material.

It is contemplated to employ the standard form of line-composing matrix to carry the letter elements for reproduction photographically on the film. The matrices, however, will be constructed of aluminum. Instead of the intaglio letter characters as used in relief printing, the characters appear on the "casting" or photographic edge, either white on a black background or black upon a white background. Two-letter matrices are also comprehended in the scheme. Standard vise jaws to limit the length of line and spacebands and line-justification means are employed.

Author's or compositor's corrections, it is stated by Dr. Bloom, will be handled in the same manner as for letterpress except that in place of casting a slug, the

MACHINE TOOL ROTARY SHAVER



(U. S. and Foreign Patents applied for)

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G-E cast-in immersion heating units make possible uniformly printed sheet, better plates, less waste of metal, and clean, quiet, and more comfortable working conditions.

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GENERAL ELECTRIC

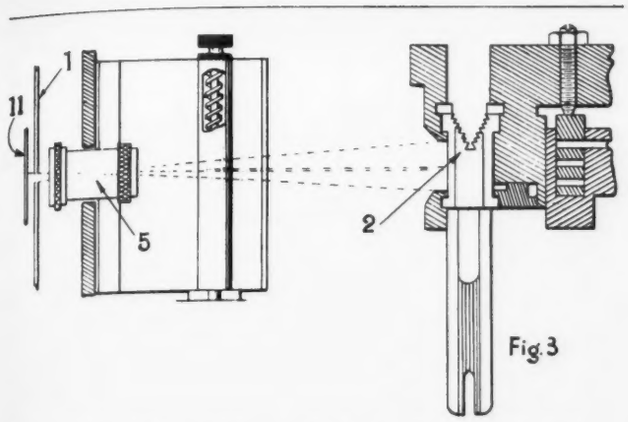

Fig. 3.—Side view diagram showing relation of camera 1 to matrix line 2 in the Friedman-Bloom photo-composing device. Here the first elevator bearing the matrix line is resting upon the vise cap before the camera which is substituted for the casting mechanism of an Intertype or Linotype.

line would be composed on the film and stripped in.

The key characters on the matrices are 18-pt. The range of enlargement without distortion would be up to 54-pt. and the range of reduction would be down to 5-pt. type size. These ranges, it is stated, would vary to some degree with the focal point of the lens used in the camera.

The means for photographically reproducing the

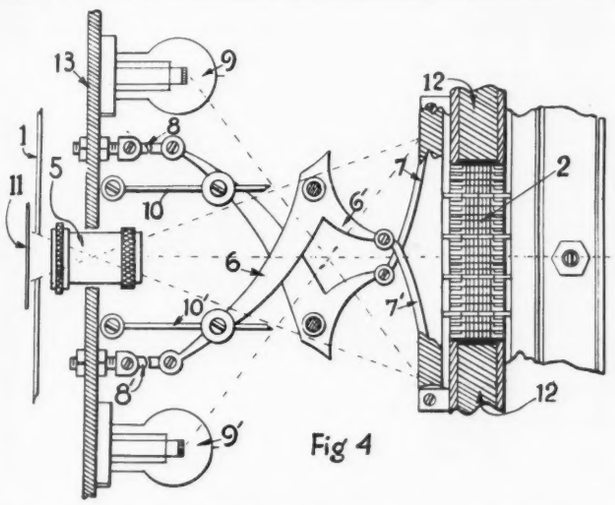

Fig. 4.—Top plan view of justified matrix line and camera adjusting means as employed in the Friedman-Bloom photo-composing machine. This diagram shows the means by which larger or smaller characters may be reproduced photographically on a roll film 11 contained within the camera without requiring a different set of matrices for each type point size. The camera 1 is mounted upon a frame to which is attached a support 13. The camera lens 5 projects through the support and is movable with the latter.

A pivoted lazy tong 6 and 6' connects the camera support 13 through the link connections 7-7' and 10-10' with the vise jaws 12-12'.

When the support 13 and the camera are moved toward the matrix line 2 to enlarge the letter characters on the film 11, the vise jaws 12 and 12' will be moved toward each other to decrease the width of the line so the line won't extend beyond the side limits of the film 11. While the representation of the characters in the matrix line will be reproduced larger on the film, the line will be maintained of constant width. When the camera is retracted from the matrix line the lazy tong and links will act to spread the jaws 4 and 4' farther apart to widen the line of characters so that while the representation of the characters will be smaller on the film the width of the line will be maintained constant.

At 9 and 9' is shown a pair of lamps for illuminating the matrix line 2. Adjustable shields 10 and 10' prevent light rays striking the lens 5. The shutters move through a small arc of a circle or fanwise by reason of pivotal connection to the lazy tongs 6 and 6'.

As is explained in the article accompanying these illustrations, the camera may be adjusted closer to or farther away from the matrix line by manipulating a turning handle which is located approximately in the same position as the mold disk turning pinion on line-casting machines. The camera is mounted upon a rack and gear mechanism which is actuated to move the camera when the handle is turned.

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Halftones are better reproduced with BURGESS Chrome Mats

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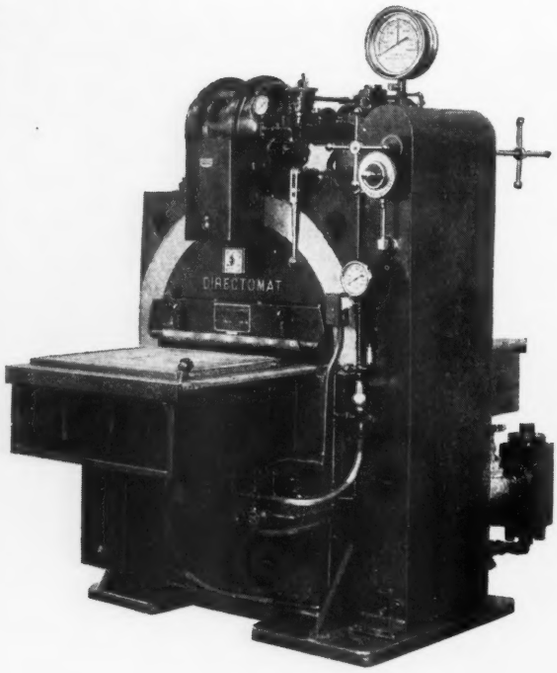
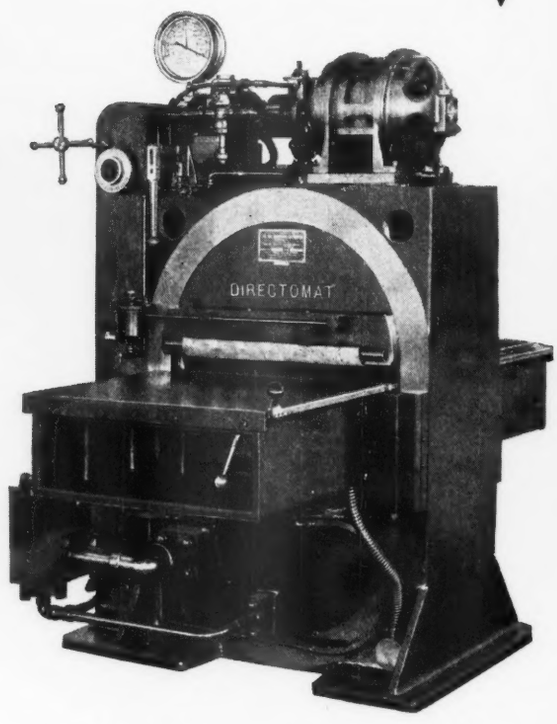
THE DIRECTOMAT
HYDRAULIC MATRIX PRESS



← Front View

Rear View ↓



WHY DISCERNING MANAGERS CHOOSE DIRECTOMAT MATRIX PRESSES

(1) It Improves Quality of Mats:

With proper care and suitable materials the DIRECTOMAT will positively produce a better and sharper matrix than can be obtained by matrix rollers, steam drying presses and the brush beating system. ● Micrometer measurements definitely prove that dry mats moulded on the DIRECTOMAT have considerably less variation in moulding depth between hairline rules and large type than roller-moulded mats moulded from the same form under identical conditions. ● The DIRECTOMAT is unequaled for register color work, as evidenced by the Toronto Star Weekly, the Chicago Herald-Examiner and the large volume of color comics produced by the New York Daily News and other DIRECTOMAT users.

(2) It Saves Time:

When COLD-moulding (mill-conditioned dry mats) the actual moulding operation takes only 6 seconds, as against 15 to 30 seconds on a modern matrix roller. When HOT-moulding (plastic mats or wet mats) it takes from 2 to 7 minutes to mould and dry a matrix in ONE operation.

(3) It Saves Type and Ad Plates:

The DIRECTOMAT eliminates guesswork and permits application of the right amount of pressure to conform with the varying characteristics of form, mat and blankets. It also eliminates the troubles caused by the inherent tendency of the roller to push the type off its feet, crush weak slugs and electrotypes, break the kern of italic type, turn over rules, spread electrotypes and zincs, thicken the screen dots of halftones, and cause hard edges. ● Users state that standing want ads, when moulded on a DIRECTOMAT, can be used THREE TIMES LONGER than when moulded on a roller. In other words, the DIRECTOMAT SAVES TWO-THIRDS of the cost of resetting of standing matter.

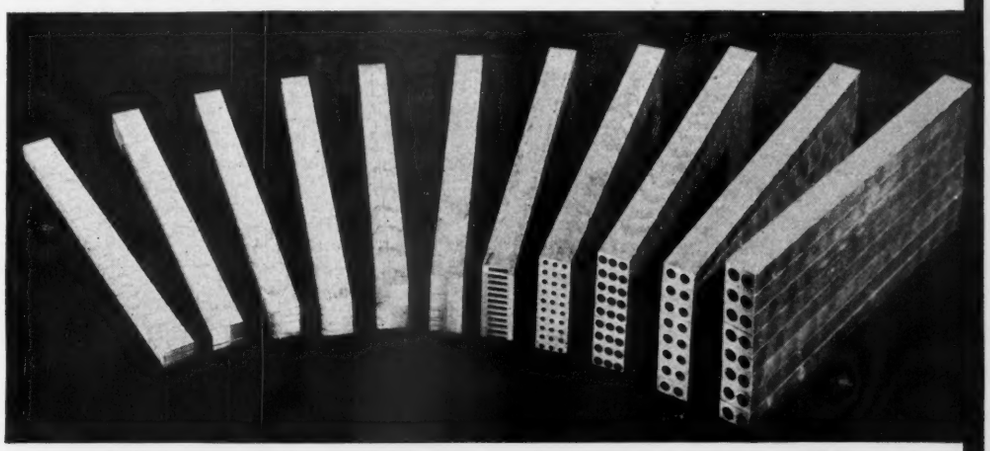
OVER 30 INSTALLATIONS BEAR OUT OUR CLAIMS

LAKE ERIE STEREOTYPE EQUIPMENT CORPORATION

Division of Lake Erie Engineering Corp. **Kenmore Station, Buffalo, N. Y.**

LEADS, SLUGS, RULES and BASE—

all from 1



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An adequate supply of high quality strip material in the composing room makes for operating economy.

The first cost of Elrod equipment is moderate; the operating cost surprisingly low. Write for samples of slug material and full information.

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Set in Ludlow Karnak family

matrix lines automatically and as fast as they are composed and justified, comprises a camera properly positioned in front of the matrix line. The camera is positioned in the same relative sidewise position which would be occupied by the metal pot, mold disk and mold in the conventional line-composing machine.

The camera is adjustable toward and away from the matrix line and is provided with a lens or objective. The roll film within the camera is fed with an intermittent movement by feed rollers, the film being supplied from a feed reel and wound up on a pick-up reel. The camera shutter is synchronized with the operation of the machine so that as fast as a matrix line is justified between the vise jaws the camera will be operated automatically to photograph each line in succession.

Large or small letter characters may be produced on the film from the same set of matrices, *i.e.*, the point size may be varied without substituting one magazine for another to obtain the different point sizes. The inventors state this is to be accomplished by making it possible to move the camera toward or away from the justified matrix line. A calibrated instrument is used to guide the operator in determining the proper size of letter character which is to be photographed on the film when the camera is in any selected position.

A lazy tong arrangement is interposed between the camera and vise jaws to position the camera in relation to the vise jaws, as well as to widen or narrow the space between the vise jaws.

The camera is mounted upon a rack and gear mechanism and suitably connected by bevel gears to a handle which is manipulated by the operator to position the camera the proper distance from the matrix line for enlargement or reduction of the letter characters. The handle is located in about the same position as the mold turning handle on the conventional line-casting machine.

Referring to Fig. 4, it will be seen that when the camera is moved toward the matrix line for enlarged representation of the letter characters the vise jaws will be moved closer together to decrease the width of the line of characters from extending beyond the side limits of the film. When the camera is moved away from the matrix line, the lazy tongs will act to spread the vise jaws farther apart to widen the line of characters, so that while the representation of the characters will be smaller on the film, the line will be maintained of constant width.

It is claimed by the inventors that this method of photographically reproducing composition on roll film is also applicable for the production of moving picture film titles, animated or moving signs or the like.

CLINE-WESTINGHOUSE ELECTRICAL EQUIPMENT
ALTERNATING CURRENT
FOR OFFSET PRESSES
DIRECT CURRENT
ENGINEERED FOR... LOCAL CONDITIONS
CLINE SYSTEM
DESIGNED FOR... PRESS REQUIREMENTS

E. E. Straus of Louisville, Ky., has joined the Harris Seybold Potter organization and will be in charge of the lithographic exhibit at the Great Lakes Exposition in Cleveland, up to and including October 4. Mr. Straus hopes to meet many of his friends in the lithographic industry while in Cleveland.

Litho Exhibit at Cleveland Exposition

Each of those printing plant mechanical executives who stop in the Exhibition Hall at the Great Lakes Exposition in Cleveland to see the big offset lithographing press which is being shown by the Harris Seybold Potter Company, can never tell whether the work being turned out may be something the mail man will be leaving at his own front door before the week is out. Most of the work which is being done for demonstration purposes is actual commercial work for one of the lithographing companies cooperating in the exhibit. One of the jobs done was a handsome portrait in colors of George Washington, copies of which are for distribution at the Exposition.

Central Lithographing Company, Continental Lithograph Corporation, Crane-Howard Lithographing Company, Morgan Lithographing Corporation and Reserve Lithograph and Printing Company (all Cleveland firms) are cooperating in the exhibit.

The Exposition will continue at least until October 4 which will give vacationing executives, as well as those who make special trips, an opportunity to take in the lithographic and the many other exhibits.

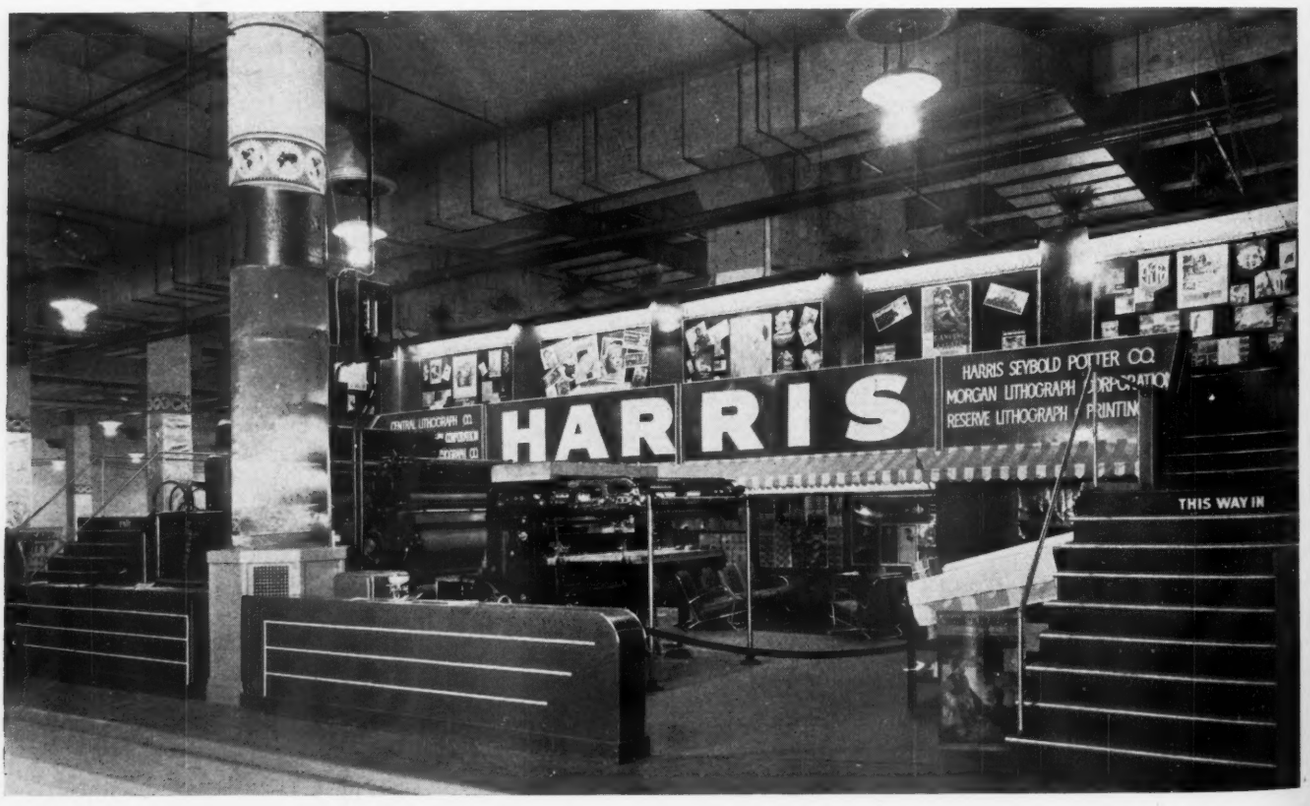
The exhibit has been arranged with main floor working space for the HSPCo. color offset printing press on the lower level, while steps lead from either side of the exhibit to a balcony where visitors may view five illuminated panels of representative work done by as many Cleveland lithographers. Operation of the press may also be observed from the balcony.

Mann Wins Prize

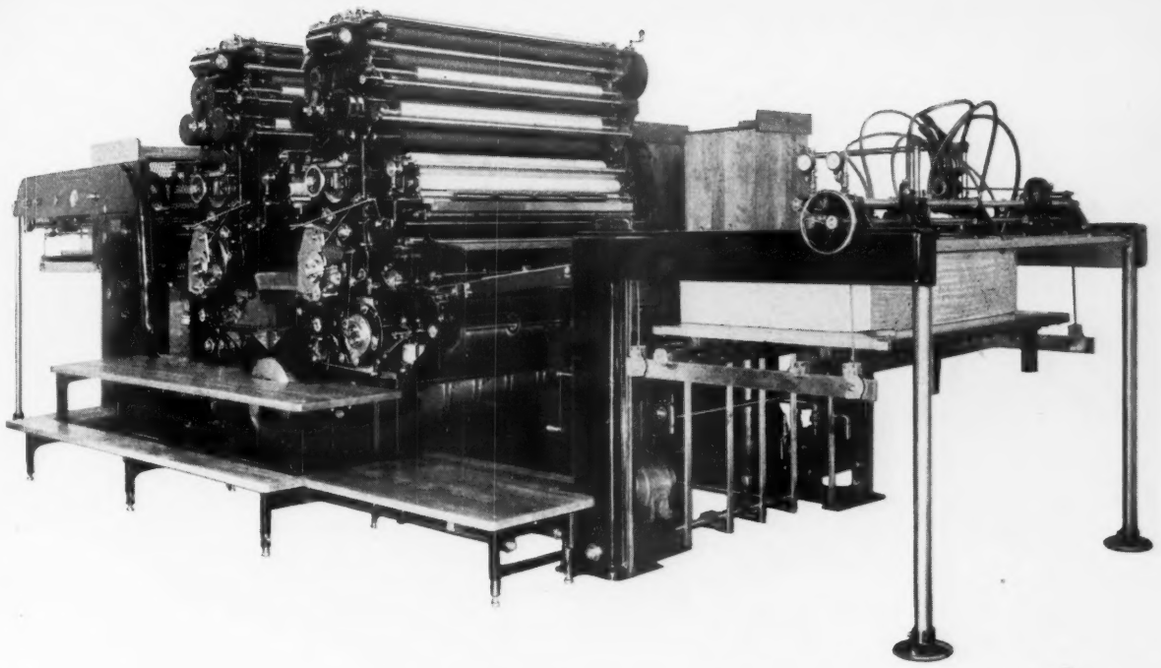
Hec Mann, typographer with the Kable Bros. Company, Mount Morris, Ill., was one of the winners in the recent contest sponsored by the Ever Ready Label Corporation, New York, for an advertisement to occupy the back cover of the New York and Brooklyn Red Book Telephone Directory. About 300 entries were submitted.

Alexander Returns

Having visited Russia and most European countries on his annual tour of agencies combined with a hioliday, Harry W. Alexander, General Sales Manager, American Type Founders Corporation, returned July 13 on the Zeppelin "Hindenburg." Mr. and Mrs. Alexander were passengers on the maiden Eastern voyage of the Queen Mary. Mr. Alexander traveled nearly 10,000 miles by air. He is said to be one of the most widely traveled sales executives, averaging 40,000 miles a year.



Harris Seybold Potter in Cooperation with Cleveland Lithographers Have Interesting Exhibit at Great Lakes Exposition



The HARRIS·SEYBOLD·POTTER Answer

TO THE DEMAND FOR PRESS ROOM SPEED ON LARGE EQUIPMENT

Leading features on the new 42 x 58, that augment the many fine Harris features of the past, and that give it supremacy in quality and speed operation are:

1. Revolutionary Harris H. T. B. *Stream Feeder,* making high press speeds possible and practical.

2. Choice of rotary *three point* or *feed roll* registering mechanism.

3. Precision tapered pre-loaded *roller bearings* on all cylinder journals and main drive.

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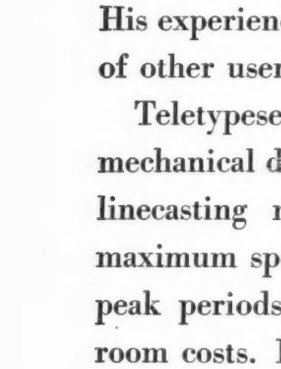
"Cost of type production cut in half"

This is what one publisher reports after using Teletypesetter. His experience checks with that of other users.

Teletypesetter is a successful mechanical device that operates linecasting machines at their maximum speed. It eliminates peak periods—cuts composing room costs. In a typical installation, Teletypesetter pays for itself in less than two years.



THIS BOOKLET TELLS YOU WHY

If you'd like to know why Teletypesetter can be a time and money saver in your composing room, let us send you this booklet giving full details. TELETYPESETTER CORPORATION, 1400 Wrightwood Avenue, Chicago, Ill.

TELETYPESETTER

Flint Buys Temple Ink

Official announcement is made that the assets and business of The Temple Ink Corporation, Denver, Col., has been acquired by the Howard Flint Ink Company.

The Flint Company will immediately enlarge and modernize the Temple factory at Denver. Wesley Temple is being retained as manager of the Denver property for the Flint Company. Mr. Temple is well known to all the printers and publishers in the Denver district.

The acquisition of the Temple Corporation adds another unit to the several Flint factories already operated in Detroit, Chicago, Houston, New Orleans and Indianapolis.

Ideal Adds Another Office

A new sales office was recently established by the Ideal Roller & Manufacturing Company at 329 Fourth Ave., Pittsburgh, Pa. This is the fifteenth sales office of the Ideal company, most of which have been established within the past six years.

The new branch is in charge of Arthur A. Linville who is well known to the graphic arts industry.

According to Mr. Linville, the roller industry is making new and startling developments as the result of anticipating the demands which will be made upon rollers by the new fast-drying inks and new high-speed presses.

N.A.P.-L. Convention

A practical program covering many important phases of lithographic plate making, presswork and plant management has been arranged for the convention of the National Association of Photo-Lithographers which will be held in Atlantic City, N. J., September 18 through 20.

The first of the technical discussions of interest to mechanical executives will take place on Saturday morning, September 19, when A. P. Reynolds, chemist for the Spaulding-Moss Company, Boston, will present a talk on plate-graining. He will cover the importance of proper size and depth of the grain on plates and how to obtain such grains.

Harvey Glover, Sweeney Lithograph Co., Belleville, N. J., will tell how unusual problems in lithographic plants have been solved.

Wm. C. Heubner will address the meeting on the relative merits and uses of paper, film and glass negatives, with relation to the quality and price of work to be turned out. He will stress the importance of better negatives, and half-tones, and will discuss dot etching, stripping and deep etch.

Under the chairmanship of Summerfield Eney, Champion Paper & Fibre Company, an intensive press problem session will be held, covering such phases as quality production for a long run from albumen plates; how to avoid blanket difficulties, picking, streaking, etc. Mr. Eney will also advise on the solution of other problems frequently met with in the pressroom.

A number of other technical subjects will be taken up Saturday afternoon.

New Sales Manager

George M. Snodgrass has been appointed general sales manager of the Imperial Electric Company of Akron, Ohio. Mr. Snodgrass is widely known in the electrical industry for his technical knowledge of motors and control, and for his active work with the National Electrical Manufacturers Association.

Patent Papers:

Printed copies of patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D. C., and enclose 10 cents for each patent paper wanted.

Patents

Plate Making and Printing Press Developments Show Activity

JUNE-JULY

Bookbinding Machinery:

2,046,278. BOOKBINDING MACHINE. Robert B. M. Taylor, Newark, N. J., assignor, by mesne assignments, to Parallex Corporation, Newark, N. J., a corporation of New Jersey. Application March 25, 1936, Serial No. 70,743. 16 Claims. (Cl. 11—1.)

9. A book binding machine embodying a feed shelf, a rack having a plurality of spaced presser bars positioned in a plane perpendicular to the plane of the feed shelf, actuating means for the rack whereby the presser bars are moved in relation to the feed shelf while engaging the convolutions of a binding wire of a book upon the feed shelf, to increase the obliquity of the portion of each such convolution projecting beyond the edge of the book, a crank shaft having a plurality of cranks, an arm rigidly secured to a crank upon the shaft, a clamp bar carried by the arm and positioned above the feed shelf, a torsion spring acting upon the shaft, a bearing member carried by another crank upon the shaft, and a roller carried by the bearing member and engaging the rack, whereby the clamp bar is actuated by the springs simultaneously with the movement of the presser bars.

Composing Machinery:

2,045,681. METAL POT FOR MATRIX COMPOSING AND LINE CASTING MACHINES. Christian Augustus Albrecht, Berlin, Germany, assignor to Mergenthaler Linotype Company, Brooklyn, N. Y. Application February 14, 1934. Serial No. 711,120. In Germany September 29, 1933. 2 Claims. (Cl. 22—70.)

1. A pump plunger for the metal pots of matrix composing and line-casting machines, comprising a substantially closed hollow piston provided with an upper wall formed to permit free movement of the plunger rod and yet cleave and shed metal dross when the upper end of the piston is raised above the level of metal in the pot.

2,046,301. SLUG CASTING MOLD. Einar G. Klingberg, Long Island City, and David L. Anderson, Brooklyn, N. Y., assignors to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application September 17, 1935, Serial No. 40,968. 15 Claims. (Cl. 199—57.)

1. A slug casting machine having a longitudinally slotted mold for casting slugs and means for ejecting the slugs from the mold in a direction transversely thereof, a mold comprising spaced members forming a slug casting slot between them, a liner between the members for closing an end of the casting slot, and means connecting the portion of the liner adjacent to its inner casting end directly to one of the mold members irrespective of the position of the inner end of the liner longitudinally of the mold to secure the inner end of the liner against displacement transversely of the mold.

Feeders, Folders, Deliveries:

2,046,728. SHEET FEEDING MECHANISM. Joseph Conn Dawson, London, England, assignor, by mesne assignments, to Dexter Folder Company, New York, N. Y., a corporation of New York. Application February 4, 1933, Serial No. 655,225. In Great Britain February 9, 1932. 14 Claims. (Cl. 270—62.)

1. In an apparatus a timed mechanism for acting on sheets, untimed mechanisms for similar use and one or more of which may be employed with or without the timed mechanism, sheet feeding means for the timed and untimed mechanisms and adapted to be operated in timed or untimed manner in accordance with the particular mechanism or mechanisms employed, and means for controlling the sheet feeding means and advancing or retarding the timing of feed of the sheets thereby in relation to the cycle of operation of the timed mechanism.

2,047,280. PAPER ROLL STAND FOR PRINTING PRESSES. Myer Melnick, Bronx, N. Y., assignor to Irving Trust Company, a corporation of New York, trustee for R. Hoe & Co., Inc., a corporation of New York, debtor. Application February 1, 1933, Serial No. 654,564. 4 Claims. (Cl. 242—58.)

1. A device comprising a paper roll support adapted to carry a paper roll, a control arm pivoted at one end and free at the other end and with the free end of the arm bearing against the surface of the paper on the paper roll, a weight separate from the arm but carried by the portion of the arm between the pivot and the free end of the arm to provide an inertia portion of the arm and the free end of the arm being of light weight in order to obviate inertia of the arm from causing the free end to be thrown from the paper when the roll operates at a relatively high speed, spring means urging the free end of the arm against the paper roll, and contact means operated by the arm when the free end of the arm has been moved to a predetermined limit.

2,047,813. WEB SPLICING DEVICE. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application March 17, 1933, Serial No. 661,253. Renewed November 29, 1935. 8 Claims. (Cl. 242—58.)

1. In a web splicing device, the combination of movable means for supporting the fresh and running rolls and means whereby the fresh roll may be brought up to web speed before splicing in a plurality of accelerating steps, each one increasing the speed of rotation of the fresh roll.

Miscellaneous:

2,045,035. PAPER ROLL PLUG AND SHAFT. Edgar A. La Rock, Ogdensburg, N. Y. Application March 8, 1935, Serial No. 10,107. 4 Claims. (Cl. 242—68.)

2 In combination with a shaft formed with a circumferentially extending seat, a roll

500 MATS

. . . and not a sign of wear!

THE above illustration speaks volumes for the ability of A-Z Alloy to take it and like it. That pile of five-hundred mats, shown in the background has just been punched into one plate made from A-Z Alloy—and still the metal shows no wear.

Not so long ago, fifty mats were plenty for any one plate. Today the stamina of A-Z Alloy is settling most all of the arguments between engravers and stereotypers. And, when it comes to etching speed, this modern metal can show a clean pair of heels to any zinc.

Leading metal distributors in the United States, Canada and England now carry stocks of this metal.

A-Z ELECTRIC ALLOY

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Both Made by the Electric Induction Process

Stereotypers

DESERVE THIS HOT WEATHER BREAK

THEIR job is the hottest in the publishing plant. Hence every aid to lower temperature operation is both a measure of mercy and an aid to stereotyping efficiency.

Ventilation and modern equipment help to reduce working temperatures. Metal kept in eutectic balance is an important aid. Selection of a dry mat that works well at low temperatures is likewise important—a quality universally conceded to Certified Mats.

For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

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supporting plug comprising a cup-shaped body of sheet metal having an annular wall, a head integrally united thereto, and an open ended neck extending inwardly from the head axially of the plug and provided with an inwardly disposed annular flange at its inner end, the neck and an opening defined by the flange being of a diameter to permit the shaft to be slid freely through the plug and the neck rest upon the shaft with the flange engaged in the seat extending circumferentially about the shaft to hold a roll against shifting longitudinally of the shaft while permitting the roll and plug to turn freely about the shaft.

2,045,059. WEB SUPPLY MECHANISM FOR PRINTING MACHINES. John R. Tomlin, Brooklyn, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New Yrok; Irving Trust Company, trustee. Application January 29, 1932, Serial No. 589,566. 29 Claims. (Cl. 242—75.)

12. In a support for two web rolls which are successively advanced to feeding position, a braking device adapted to resist rotation of either of the rolls, and means including an over-running clutch whereby the roll which is rotating at the higher speed will be connected to the braking device.

2,046,714. COLOR MATCHER. Earl D. Wilson and Carl C. Hein, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania. Application July 19, 1934, Serial No. 736,029. 3 Claims. (Cl. 88—14.)

1. In a device for measuring a reflection characteristic of a surface to be tested, an integrating chamber having a pair of apertures lying upon axes intersecting within the chamber, the chamber having a light-reflecting inner surface, a photo-responsive element mounted in the chamber, and screening means arranged to prevent direct illumination of the photo-responsive element from either of the apertures, the screening means including a light-deflecting element mounted adjacent the intersection of the axes and arranged to deflect light from one of the axes substantially to the other of the axes.

2,047,372. APPARATUS FOR WELDING INK AND CELLULOSE TISSUE. George Jalens, West New York, N. J. Application September 15, 1933, Serial No. 689,674. Renewed March 30, 1936. 1 Claim. (Cl. 34—48.)

An apparatus for drying moisture-proof cellulose tissue comprising a pair of stands provided with means for supporting a web therebetween, means for making an ink impression on the web when moving from one stand to the other; two heated rollers of small diameter and light weight in direct frictional contact with and actuated by the web, one arranged to heat the web before an ink impression is made thereon, and the other to dry the web after the ink impression has been made, and manually operable means for selectively controlling the degree of heat in the rollers.

2,047,894. PASTING MECHANISM. William E. Sharkey, Middletown, Ohio, assignor to The Raymond Bag Company, Middletown, Ohio, a corporation of Ohio. Application March 16, 1935, Serial No. 11,397. 6 Claims. (Cl. 93—8.)

5. In a tape attaching machine, means for feeding the tape in the direction of its length, a paste applying device having a part movable into and out of engagement with the tape as the latter is advanced by the feeding means, means operated in timed relation to the tape feeding means to cause the part of the paste applying device to intermittently engage the tape and apply paste to separated portions thereof, and means controlled in accordance with the movement of the part of the paste applying device to positively interrupt the application of paste to the tape when the part is moved out of engagement with the tape.

Offset-Lith:

2,046,189. LITHOGRAPHIC OFFSET PRESS. Joseph Schultz, Cleveland, Ohio. Application May 31, 1932, Serial No. 614,408. 16 Claims. (Cl. 101—147.)

1. A mechanism, including a reservoir of liquid, for dampening a plate on a lithographic press, the mechanism being disposed on a support pivotally mounted on the frame of the press, the pivotally mounted support permitting the shifting of the dampening mechanism from cooperative engagement with the plate to a position spaced a substantial distance from the plate, and including means adapted to maintain the reservoir level during the shifting.

2,046,959. ART OF PRINTING. John V. Mehl, Union City, N. J. Application July 26, 1935, Serial No. 33,361. 6 Claims. (Cl. 101—149.)

2. In the method of printing lithographically with an ungrained metallic plate having lithographic printing portions and non-printing metallic portions, the step of coating the non-printing portions with a mixture of glucose, glycerine and 50% sodium hyposulphite solution in the proportion by weight of approximately one part of each of the first two ingredients to two parts of the sodium hyposulphite solution.

Plate Making:

2,044,991. ARTICLE AND METHOD BY WHICH "BEN DAY" TONES ARE PHOTOGRAPHICALLY PRODUCED. Fayette E. Marsh and Charles H. Andersen, Los Angeles, Calif., assignors to Charles V. Price, Los Angeles, Calif. Original application May 8, 1934, Serial No. 724,534. Divided and this application May 20, 1935, Serial No. 22,339. 8 Claims. (Cl. 95—5.)

1. The method of producing "Ben Day" tones or shading effects which consists in providing a master drawing to be toned, superimposing upon the drawing a transparency, coloring the areas on the transparency with materials having different reflective coloring values corresponding to the areas of the drawing on which tones are desired when reproduced by printing, separating the transparency from the drawing and making a negative by photographing the transparency and the colored areas thereon through a stencil in "Ben Day" pattern.

2,045,606. PRINTING PLATE AND PROCESS OF MAKING THE SAME. Barnard J. Lewis, Brookline, Mass. Application June 30, 1933, Serial No. 678,391. 14 Claims (Cl. 101—401.1.)

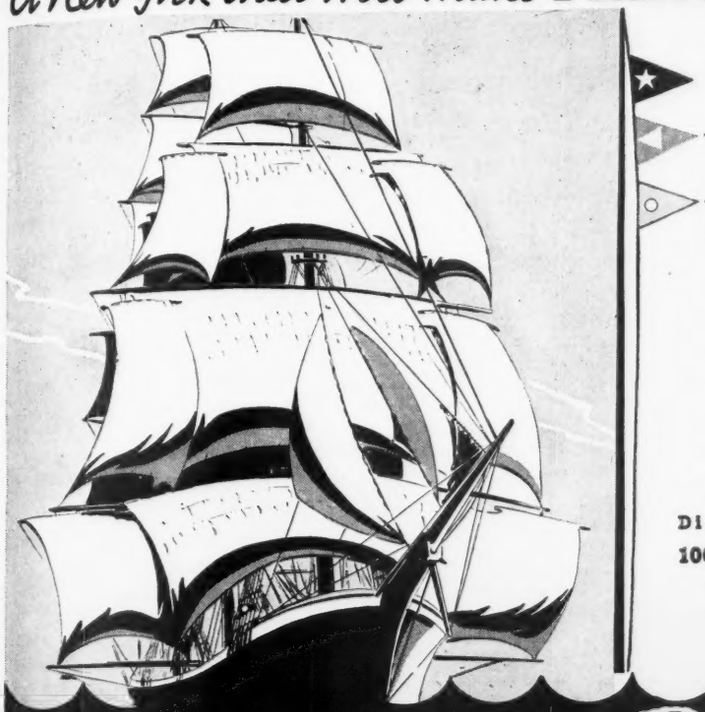
1. A method of making a printing plate, consisting in adhesively uniting a coating of soluble sheet material to a base, softening the exposed side of the plate with a solvent and forming depressions in the softened areas, and applying a brushable, hard-drying medium to other areas, thereby to produce in the printing surface of the plate irregularities capable of forming corresponding tonal variations in a print taken from the surface by impression of the plate.

2,046,326. COLOR REPRODUCTION PROCESS. Alwin G. Hapke, Chicago, Ill. Application March 8, 1935, Serial No. 10,072. 7 Claims. (Cl. 95—5.1.)

1. A process for use in color printing or color reproduction, comprising the use of an ordinary photographic negative, of the picture or other thing to be reproduced, to obtain a positive visible print of the negative on the smooth white surface of a waterproof plate, the white surface having been sensitized to produce a blue print positive which is practically of non-photographic value, blacking or shading the portions of the print that are desired to appear in a certain color on the ultimate picture, washing off or removing all other portions of the print, leaving only the treated portions on a white background, and producing a photographic negative of the print thus treated by directly photographing the print, from which negative the zinc etching or other printing block, for this particular color, is then made.

(Continued on Page 55)

A New Ink that Will Make **PRINTING PROFITS** for You



The Yankee Clipper, fleet courier of the Seven Seas, carried silks and spices from Old World to New.

Today Morrill's ***Clipper Blue,*** keyed to the spirit of that pioneer craft, lifts your printed message on wings of vibrant color, carrying silks and spices and a million other articles of commerce to old and new markets everywhere.

Clipper Blue in full strength is quite permanent and has a rich, deep overtone with a bronzy sheen. Reduced with transparent base or semi-opaque white, it provides a variety of clean, brilliant tones. It's alkali-proof and water-proof and easily worked. Try it in your own plant. Write for samples.

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Clipper Blue BY MORRILL

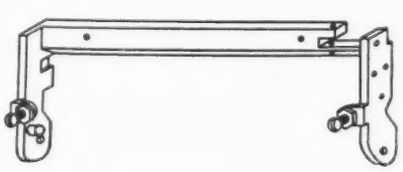
OBSOLESCENT PARTS—LIKE OBSOLESCENT MACHINERY EAT UP PROFITS!

There are many "Star" parts for typesetting machines that have incorporated features that will **lengthen their life and increase** the **efficiency of the machine.** They have all stood the test of long service in the field. They will be found in use in thousands of composing rooms throughout the country. Illustrated below are just a few of them that have obvious points of superiority.

IMPROVED SPACEBAND BUFFER FINGER (D1211A)

Bottom of spaceband strikes the bronze spring. Makes finger itself indestructible and aids in assembling. Saves band wear. Reduces transpositions.

Adjustable Assembling Elevator Gate



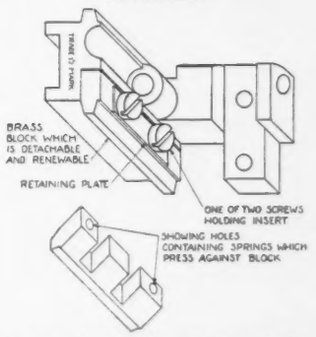
D 2733A Unassembled
D 2821A Assembled
Adjusting screws on both ends permits taking up wear.

ACE BELTS
Have made records in long wear. They are much more efficient, too, because they do not stretch.

Detailed description of the above and other improved parts will be gladly sent on request.

TRADE ★ MARK

Everlasting Adjustable Delivery Slide Long Finger Block (D1636A)


BRASS BLOCK WHICH IS DETACHABLE AND RENEWABLE
RETAINING PLATE
ONE OF TWO SCREWS HOLDING INSERT
SHOWING HOLES CONTAINING SPRINGS WHICH PRESS AGAINST BLOCK

An insert permits adjustment for wear. Can be replaced at small cost. Saves replacement of other expensive parts.

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QUALITY

of condensation is strange—if not too forced it has, in printing types, exceptionally rapid eye acceptance. It crowds more letters, hence more meaning, into restricted space. And, as in many cases, space is worth its weight in platinum, Beton Medium Condensed will undoubtedly meet warm approval in time to come. Attention particularly is called to the unusual typographic quality of this face. It is available from 8 to 84 point at all accredited agencies of

THE BAUER TYPE FOUNDRY · INCORPORATED

TWO THIRTY-FIVE EAST FORTY-FIFTH STREET · NEW YORK CITY

Offset?

(*Continued from Page 26*)

particles to freshly-printed sheets by means of a spray. These particles hold the printed sheets apart to prevent ink offset. The liquid used for the spray in this process is of such nature that the particles are practically dry when they reach the surface of each printed sheet.

ATF Portable Non-Offset Gun

Made in four models, to provide for its use over all makes, styles and sizes of flat-bed and rotary printing presses, the ATF Portable Non-Offset Gun is designed to prevent ink offset on freshly-printed sheets of all kinds which, ordinarily, would require slipsheeting. In addition, manufacturer states, the proper use of this device makes possible running presses at the highest rates of speed on all classes of single-color, multi-color and process-color printing; either "dry" or "wet" multi-color or process color work, according to the style of presses employed; also, the over-printing of solid color, all types of metallic inks, transparent overprint varnish and the like. It also makes possible the "backing up" of color-printed jobs, such as magazine inserts and covers, within a comparatively short space of time. There is no smudging nor sticking together of printed sheets because each time a freshly-printed sheet reaches the delivery end of either a flat-bed cylinder or a sheet-fed rotary press, the ATF Non-Offset Gun discharges a fine powder cloud on the surface of the sheet. It is interesting to note that this powder deposition cannot be seen with the naked eye, yet the microscopic particles are sufficient to hold the printed sheets apart in the pile, and thus aid drying of the ink as well as eliminating offset. This powder does not affect the color of the ink in any way.

The ATF Non-Offset Mix, used in this process, is a free-flowing liquid. In the process, it is atomized by the spray-gun and dries while in the air, falling upon each printed sheet in the form of microscopic particles which do not produce a gummy effect. The container holds one gallon of the Mix which is sufficient to spray the surface of many thousands of printed sheets, up to as many as two hundred thousand sheets, according to size. A single Non-Offset Gun will cover printed sheets of light forms up to 38 in. wide. By means of one or more additional guns, larger sizes of sheets may be treated.

The complete unit ATF Portable Non-Offset Gun occupies a small floor space area and may be moved from press to press, as needed. The control switch for operating the gun can be attached to one end of the impression cylinder of any cylinder press for accurate timing with the delivery. With this installation, a stud mounted on the end of the cylinder engages the

CLINE-WESTINGHOUSE ELECTRICAL EQUIPMENT

ALTERNATING CURRENT

FOR LETTER PRESSES

DIRECT CURRENT

ENGINEERED FOR . . . LOCAL CONDITIONS

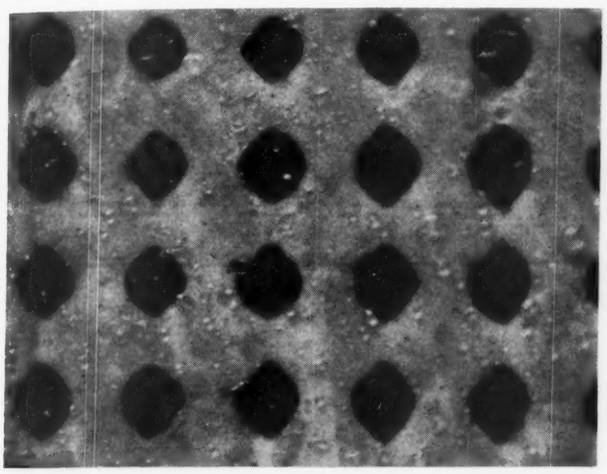
CLINE SYSTEM

DESIGNED FOR . . . PRESS REQUIREMENTS

cam on the control switch at each revolution of the cylinder, and lowers the cam for electric contact only when each impression is made. It is necessary to install a control switch on each press on which the portable Non-Offset unit is to be used.

All adjustments for the position of the gun, and for the amount of spray, can be made by hand by the pressman while the press and gun are in operation. The height of the gun is adjusted by raising or lowering the telescoping upright section, also the cross-arm which is attached to the upright. The distance of the gun from the sheet should be about the same or slightly less than the width, or portion, of the sheet to be treated. The cross-arm is adjustable for length as well as for radial direction.

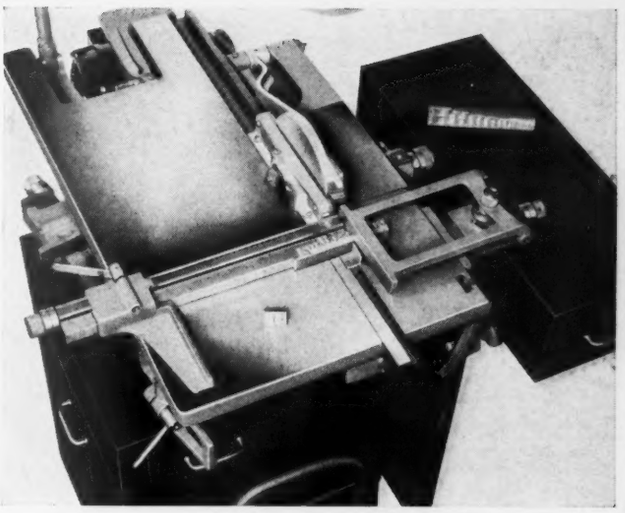
Where a fly delivery is used the gun may be tilted to direct a spray almost horizontally across the sheet. On rotary offset presses, the gun (one or more), is placed directly over the delivery pile, and the control switch is timed so that the spray is discharged when there is no delivery bar over the sheet. For high-speed rotary presses, running heavy forms, and for web rotary presses a continuous spray of the ATF Mix is essential. On such installations, a different type of control switch is necessary.



This illustration was made from a section of and the halftone dots are reproduced here exactly the same size as the original 4½ in. diam. microphotograph. These halftone dots are enlarged 130 times and show the relative sizes of particles in the ATF Non-Offset Mix liquid as compared to halftone dots in the original printed sheets. The particles, while holding apart freshly printed sheets to prevent offset, are not visible to the human eye unless highly magnified as shown here.

It is important to note that an ideal system for preventing ink offset on all makes, styles and sizes of flatbed cylinder presses and sheet-fed rotary presses, consists of a "combination" installation of an offset-preventing equipment, an automatic gas sheet dryer and static neutralizer. The use of the latter device not only eliminates static electricity in the printed sheets (one of the principal causes of ink offset), but each printed sheet is also heated to an extent sufficient to help speed drying of the ink.

With the ATF Non-Offset equipment, the Mix is fed from the material container to the gun by gravity. The lid can be removed from the container and the Mix added while the gun and press are in operation. A small portion of the Mix is required for the average job. The shape of the spray can be regulated for circular or fan-wise coverage. Turning an adjusting screw down, as far as it will go, produces a circular coverage of small diameter. Turning the screw up a few turns produces



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Experimental models were made and TESTED UNDER ACTUAL OPERATING CONDITIONS over a period of two years BEFORE the No. 3 C & G Cabinet Model was placed on the market. The NEW No. 3 C & G SAW TRIMMER was PERFECTED before it was offered for sale. No purchaser need have a part in experimentation.

The NEW No. 3 C & G Saw Trimmer is a cause for discarding earlier equipment. To see it in operation is to realize a new flow of production that means time saved and profits made.

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C & G TRADE MARK

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Where craftsmen meet ... you will find the

IMPERIAL USERS

• Fine craftsmanship requires better tools—better materials for the job. At the Craftsmen's Convention in Minneapolis were representatives of Imperialized plants from all over the country. Those plants produce quality work economically.

Undoubtedly the men from these plants shared their knowledge of what a better metal—Imperial Type Metal—means in the production of better, finer workmanship. They know that uniform balance and the constant high quality performance of Imperial Type Metals contribute substantially to the high standards of printing in their shops with a minimum metal cost. That knowledge is one of the reasons why they stick to

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IMPERIAL TYPE METAL COMPANY

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a fan-wise coverage, distributing the discharge over a lengthwise area.

In the ATF Non-Offset equipment, compressed air is required only for the operation of the spray gun. A compressor can be placed in any convenient location, not necessarily near the press nor in the pressroom. The single gun compressor is provided with 25 feet of air hose to connect with the air cleaner. It is also equipped with an automatic electric cut-out which stops the motor at a maximum of 50 lbs. pressure and starts again at as low as 35 lbs. pressure. Large compressors, intended for operating a series of two, three or more spray guns on several presses, may be mounted on the floor at one end of the pressroom or on a platform suspended from the ceiling or attached to a column. An air line of galvanized pipe is run overhead along the entire battery of presses to be equipped, with a pipe-drop over each press, the same as for gas-heater installation.

The air cleaner obviates clogging and sticking of the working parts of the gun and assists in delivering a clean mix to the sheets. The air cleaner should be taken apart and cleaned every six months.

With the ATF Non-Offset Gun, it is not necessary for the pressman to test the ink, varnish or paper stock in order to determine whether or not the job will offset. Immediately the makeready is completed and the color has been OK'd, the run may be started. It is also easier for the pressman to match colors and to hold uniform color throughout a run, because it is not necessary to "dope" the inks either at the beginning or during the progress of a run. Moreover, makeready time can be reduced, especially on rush jobs which do not require the most careful makeready. This time can be saved for the reason that it is practicable to give slightly more impression and to run slightly more ink than would be possible without the use of the offset-preventing gun. On this basis, the press may be operated at its full speed, and increased production is a natural result.

Other advantages of this process are briefly mentioned, as follows: It is possible to stack varnished sheets from three to ten times higher in the same pile. This makes it possible for the printer to do spot varnishing as well as all-over sheet varnishing, without the necessity of racking the stock and with no danger of the sheets sticking. Considerably more varnish may be applied when desirable. The Gun may be used for transparent overprint varnishes, the new gloss-dry inks, and for color printing in general, making it a comparatively easy matter for the printer to use the types of varnishes and inks which have presented difficulties in the pressroom before spraying equipment was developed.

Development of Aniline Inks

In recent years, remarkable progress has been made with quick-drying, non-offset inks, including those for aniline printing, gravure and for letterpress printing. All of these various types of ink are successful for their particular purposes. It is a well-known fact that aniline inks, in bright colors, opaque white and black, are now mixed and used in such manner that they will dry almost instantly on many different kinds of paper stock, as well as on glassine, moisture-proof cellophane and other types of transparent cellulose materials. Aniline inks are generally used on rotary, roll or web-fed presses which are specially designed to handle the volatile and highly fluid spirit inks, and it is frequently necessary to pass the freshly-printed stock over an electric hot-plate or through an electrically-heated hot-air oven, to dry the ink properly. Aniline inks are divided into two principal classes: Transparent and opaque or semi-opaque. Transparent aniline inks usually

consist of rather concentrated solutions of spirit soluble dyes in a mixture of alcohol, glacial acetic acid and ethylene glycol mono-ethyl ether. Clear white shellac may be added to increase the adhesion and toughness of the dried film, although generally at a sacrifice of the printing qualities of the ink. The opaque aniline inks are made along lines similar to the transparent inks, except that a portion of opaque white or colored pigment is mixed with the batch, and this compound is ground in a mill, much like letterpress inks.

Gravure Ink Recovery

One of the disadvantages of all types of aniline ink is in the fact that for every pound of actual color applied to paper or other stock, several pounds of the solvent must be evaporated into the air and lost. This is likewise true of the new types of colored inks used for the gravure process of printing. The solvent for these inks usually consists of some organic compound such as xylol, toluol or methylated spirit. The correct proportion of solvent must be present in the ink at the time of use in order to produce proper intaglio printing and cause the ink to dry rapidly on the paper. Quite recently, gravure printers have taken an interest in the possibility of recovering the solvent, an enormous quantity of which is evaporated and wasted. Recovery equipment has now been installed in a number of large gravure plants, notably in Europe, for the purpose of recovering a large percentage of the wasted solvent, and from all reports, the results are proving satisfactory.

Quick Drying Letterpress Inks

In the letterpress printing fields, the newest developments for the prevention of ink offset include the Vaporin inks, manufactured by the International Printing Ink Corporation; the "Flashdri" inks, perfected by the Frederick H. Levey Company, Inc.; and, the new non-offset inks being made by The Braden Sutphin Ink Co. Vaporin is now available to the printing trade in four standard blacks. It is reported that a complete range of Vaporin colors is being given practical tests, and will be ready soon for general distribution. The rapid drying of Vaporin inks is accomplished by vaporization, the volatile part of the ink being removed by heat, leaving relatively dry solids on the surface of the paper. When sufficient heat is applied, the ink dries almost instantly on the stock. Without heat, the ink dries at moderate speed in the pile. In both cases, it is said, ink offset is eliminated.

The "Flashdri" inks are also of the non-offset type; they dry rapidly on the paper stock, and are made both in black and colors. They are said to have freedom from smear, smudge and offset in all kinds of single-color, process-color and multi-color printing.

Heaters for Quick Drying Oil Inks

With practically all the new types of quick-drying oil inks, a considerable amount of heat is required for high-speed printing, superimposed colors and web magazine work. In publication plants where the new inks are being used for long runs, two different types of heaters are employed. One is known as radiant heat, which directs a powerful ray of heat to the printed surface of the web. As the web stops, the burners are automatically tilted so that the heat rays are directed away from the web. The other method is steam drum heat. By this arrangement, the printed sheet passes over an internally steam-heated drum, the heat being directed to the under side of the sheet rather than to the printed surface. At the same time, cool air is blown across the printed sheet to assist in the evaporation of the solvent in the ink to speed drying.

BOOTH'S ZINK CUT CEMENT

Eliminates the time-consuming method of making "pig pens" to confine cuts to position when used on metal base. Also eliminates messy and uneconomical open-top paste pots. Absolutely no waste.

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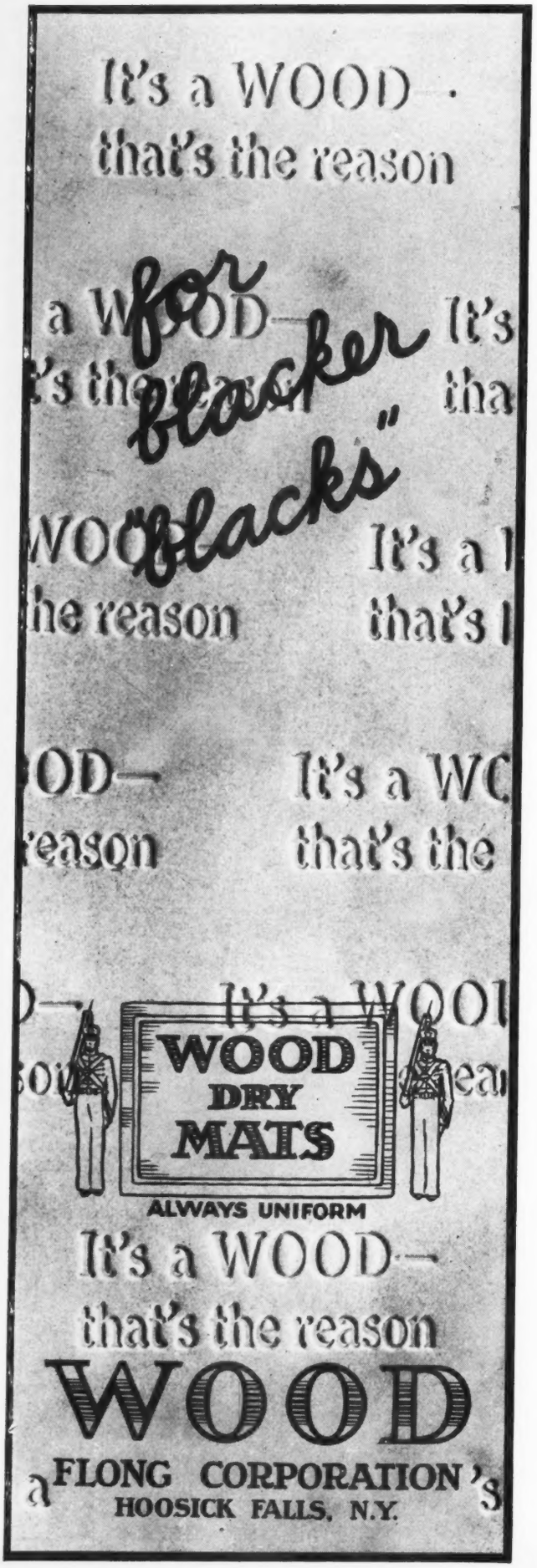
THE STAY-PUT CUT FASTENER

This cement will fasten zinc or copper cuts, electros and shell-cast stereos to wood or metal base. Use sparingly by applying small amounts of the cement to back of cut. Rotate the cut on its base with pressure from the fingers to spread the cement to film thickness.

The E. A. Booth Rubber Co.

364 Rockefeller Bldg. Cleveland, Ohio

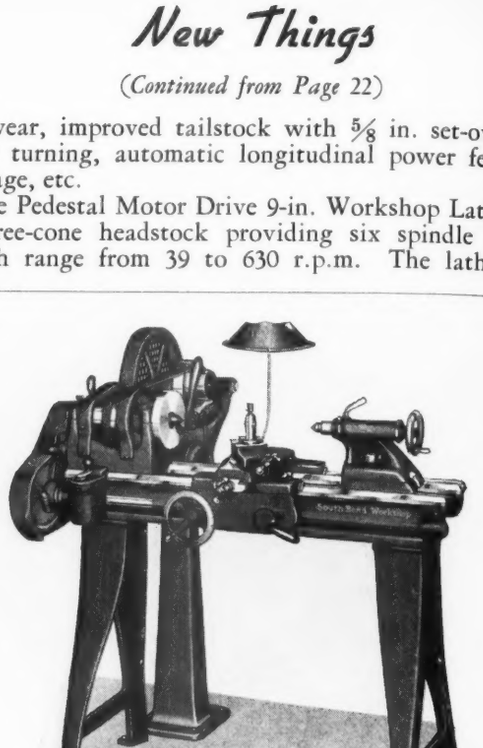


New Things

(*Continued from Page* 22)

for wear, improved tailstock with 5/8 in. set-over for taper turning, automatic longitudinal power feeds to carriage, etc.

The Pedestal Motor Drive 9-in. Workshop Lathe has a three-cone headstock providing six spindle speeds which range from 39 to 630 r.p.m. The lathe cuts



screw threads from 4 to 40 per in., and with a fine screw thread cutting attachment the number is increased to 80 threads per in.

The bed is a one-piece casting of steel and nickel iron, and bed lengths are offered in 3 ft., 3½ ft., 4 ft., and 4½ ft. Each Lathe bed has three V-ways and one flat way planed, seasoned, and handscraped so that the headstock, tailstock and carriage are in accurate alignment to within limits of 0.001 in.

The headstock casting is reinforced and webbed, giving it strength and rigidity, and its base is machined and handscraped to fit the lathe bed accurately. It is aligned by the inside V-way and inside flat way, and permanently held in place by a strong, substantial clamp.

Further information about this lathe may be obtained from the Technical Service Department, South Bend Lathe Works, or through *Printing* EQUIPMENT *Engineer.*

New Press for Iowa Paper

The Iowa City, (Ia.) *Press-Citizen* has purchased a 24-page Goss Unitube press with color units and stereotype equipment to be installed in its new home which is now under construction. The two-story, fire-proof structure is being built of light colored vitrified brick with terra cotta trim. It will be unique in that large glass brick panels are being used in place of windows, and the interior will be completely air-conditioned.

Included in the new, thoroughly modern press room will be the Goss Unitube press with balloon formers and color attachments. The stereotype department will be equipped with a Goss Unitube furnace and casting box, tail cutter and chipping block, curved router, and broaching machine.

The new press is 35 ft. long, two stories high, and weighs about 180,000 lbs. and will require almost eight months for construction and installation. Three color units are included. The *Press-Citizen* will have a pro-

duction capacity of 40,000 twenty-four page newspapers per hour. Full color facilities will be provided for r.o.p. advertising.

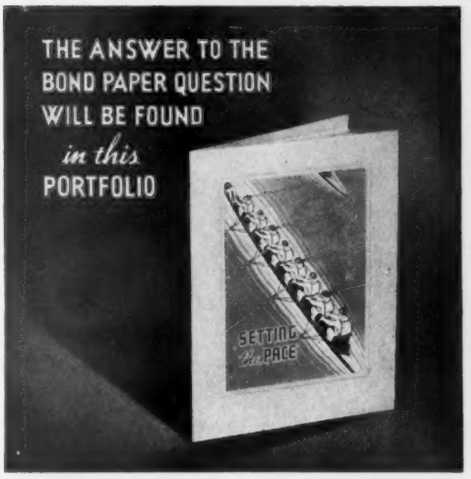
Plate cylinders on the press are solid steel forgings, and a new type of stereotype plate is locked on by means of a single lock-up device to hold the plate in positive tension. Manufacturer says this method causes the plate to hug the surface of the cylinder at all points and prevents lifting or creeping of the plate at maximum speeds. Plate cylinders and all other important drive points are mounted on ball and roller bearings. Rapidly rotating parts are dynamically balanced. All moving parts are protected by guards.

The folder is the latest type anti-friction rotary delivery design. It is stated further that light or heavy products are laid down smoothly with folded edge forward, and the possibiiity of "dog-eared" copies has been eliminated.

"Times" Installs Super-Display Linotype

The New York *Times* has installed a Forty-two Pica Super-Display Model 28 Linotype, making twenty-nine Linotypes now operated by that paper, including sixteen Model 8s and twelve Model 9s.

The new machine, which is being used chiefly for the setting of news heads, is equipped with a self-quadder, a Mohr Lino-Saw and a Margach metal feeder. Eleven 72 channel main magazines, five auxiliary magazines, and many fonts of display matrices were included in the installation, as well as a Linotype matrix cabinet and magazine rack with 24-magazine capacity.



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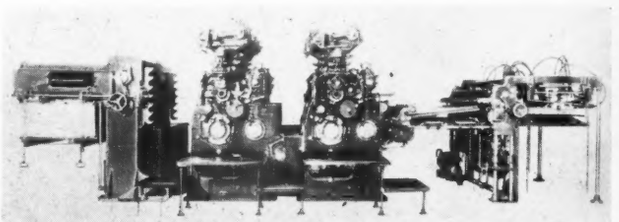
Alternate Feeding Attachment

John A. Leverenz of Graphic Arts Accessories is demonstrating a "Multirol" Automatic Alternate Feeding Attachment for application to all Miehle Vertical Presses. It is claimed use of the attachment (1) Permits efficient inking of large, heavy forms; (2) Doubles ink distribution; (3) Increased distribution of ink reduces tendency to fill middletones in halftones when using sufficient ink to cover solids; (4) Lessens possibility of shadows and roller marks; (5) Production is decreased slightly, if at all, as the press may be speeded up, in which case the same excellent results may be obtained. This is due to the double inking of the form.

Further particulars may be obtained from Graphic Arts Accessories direct or inquiries may be addressed in care of this magazine.

Miehle Unit Type Offset Presses

The unit type offset printing presses made by the Miehle Printing Press & Manufacturing Company can be furnished in one, two, three or four-color units. Each printing unit of the same size is identical, whether it is a single or multicolor press. Manufacturers state this permits a pressman, acquainted with the adjustments and settings of a single-color press, to handle a multicolor unit without additional training in the mechanical adjustment. The multicolor units are single-color presses connected in multiples with the sheets



View of Miehle Two-Color Offset Printing Press

carried from one printing unit to the other by transfer cylinders having automatic register segments which compensate for wear and backlash at transfer points. This feature insures accurate register between colors.

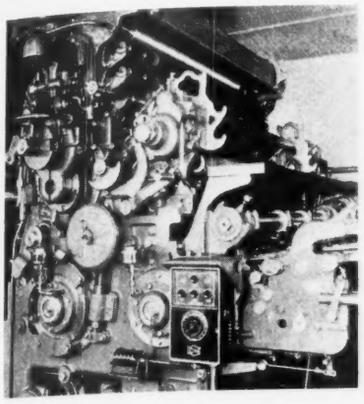
Some of the other features incorporated in these new presses are:

An improved Dexter feeder with forwarders arranged to compensate for uneven height of stock pile.

A rotary slow-down and gripper mechanism which brings the sheet gently against the front guides. While both the sheet and the mechanism are at rest the grippers close, insuring the same amount of gripper bite for every sheet regardless of speed. After the grippers are closed the mechanism gradually accelerates to cylinder surface speed and transfers the sheet to the first impression cylinder. At each transfer point both sets of grippers have control of the sheet for a period long enough to insure that there is no slippage to cause mis-register.

The adjustable plate cylinder is arranged so that it may be shifted for side register or moved forward or backward to bring gripper margins to correct position.

The pressure between the blanket and the impression cylinder can be adjusted quickly when changing from one thickness of stock to another. To change the pressure a dial graduated to one thousandth of an inch is set to the desired position. A large shaft extends across the press and is connected to each end of the blanket cylinder through a worm and gear, which insures the blanket cylinder being moved in perfect parallelism with the impression cylinder.



Side view of Miehle Offset Press showing electrical control and cylinder adjustment.

For the convenience of the operator, ample working space is provided between units. The ink fountain is made so that the blade can be dropped away from the fountain roller to permit a wash-up in the shortest possible time.

These presses are powered with Kimble electrical equipment and multiple V-belt drive and are made to take the following maximum sheet sizes:

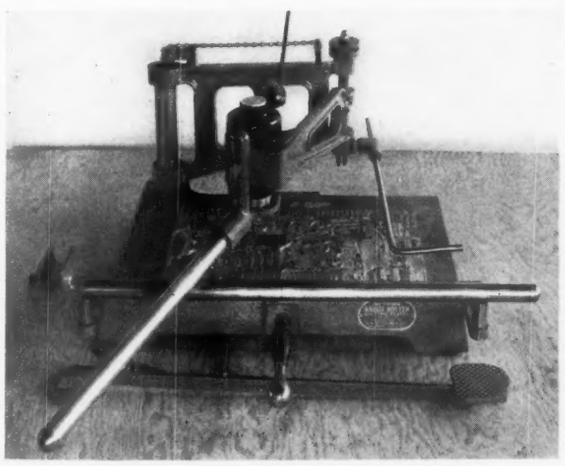
Press No. 69—46½ by 67½ in.
Press No. 57—41½ by 55½ in.
Press No. 44—29 by 43 in.

The speeds at register are:

Press No. 69—4100 I.P.H.
Press No. 57—4500 I.P.H.
Press No. 44—5000 I.P.H.

Junior Model Radial Router

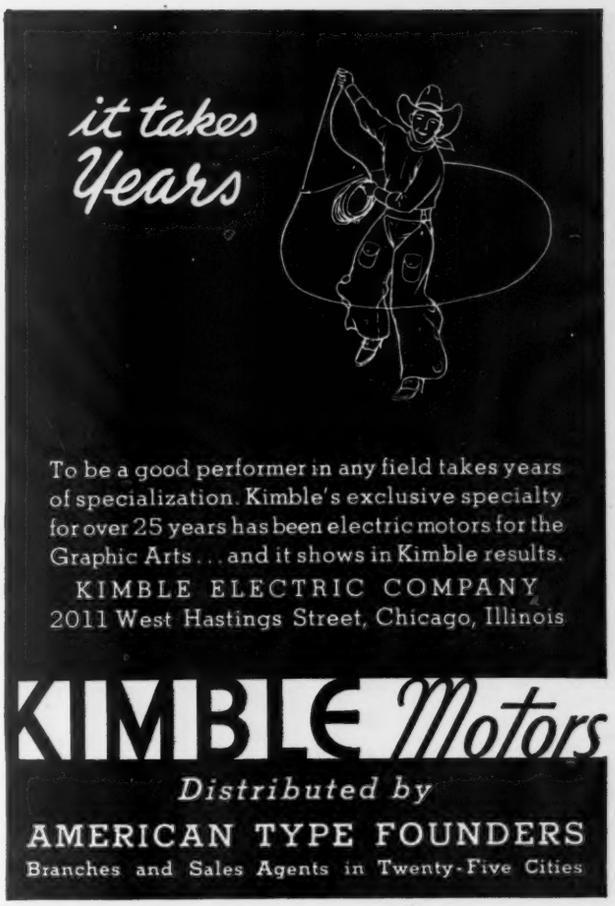
Among several new mechanisms being introduced by the J. A. Richards Company is the Junior Model Multiform Radial Router which is furnished in either bench or pedestal models. The machine has a capacity of 10½ in. by 24 in. and is provided with a quick-acting shell or type-high plate clamp. A feature of the machine is



View of Richards Bench Model Multiform Radial Router. This router is furnished also in pedestal style. Plate capacity is 10½ in. by 24 in.

the combination of standard rigid-arm with straight line controls. When arranged for the rigid arm operation the knee is controlled by an adjustable free-wheeling clamp which controls the adjustment for any length on the right-hand control rod.

Both the new Junior Model Radial Router or the Heavy Duty Multiform Radial Router are supplied with straight-line control for mortising shell plates.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Please send us particulars of the "KLEAN-O-MAT" Process for cleaning magazines in 35 minutes, also your trial offer.

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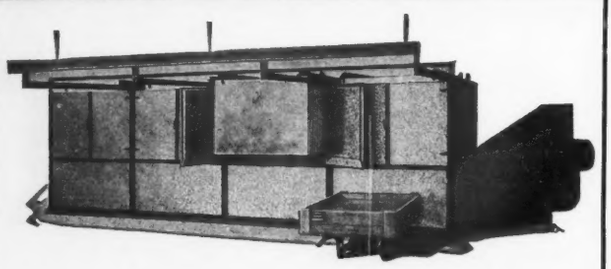

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Craftsmen

(*Continued from page 18*)

for them that they take less ink, that inks run true to color, and do not discolor—the latter feature making possible the printing of pastel shades. It is possible to sensitize the plates and to print down the design, but it is not possible at the present time to etch the plates. However, they may be graved and routed.

Lee Augustine, Printing Machinery Company, Cincinnati, Ohio, discussed "Metal Bases." A few years ago metal base was a novelty, but modern printers now consider it a necessity, the speaker asserted. To date nothing has been discovered which will prevent wood blocks from changing dimensions due to atmospheric conditions.

No printer would have the effrontery to claim that his 30-year-old press was as efficient as his latest purchases, but still many of these same printers insist on using old wooden blocks for their modern presses.

Formerly patent bases were made with tolerances of 0.002 in. plus or minus. This frequently resulted in a variation of 0.004 in. This variation had to be compensated for by the pressman by careful makeready. Due to the fact that better steels and other metals are now obtainable, patent base is now made to a tolerance of only 0.0005 in. This materially assists the pressman in his task of making ready forms.

Press proofs of a form containing heavy solids and showing streaks were displayed and the solution for the difficulty requested. The job had been printed on a four-color flatbed press. Charles Sangwin, a Milwaukee pressman of long experience, stated that he had encountered similar difficulties and had solved the problem successfully by inserting a form roller next to the cylinder which had been made $\frac{1}{8}$ in. less in diameter than the other three form rollers. This served to break up the streaking.

Tom Dunwoody, Director of Pressmen's Home, Tenn., spoke on the need for apprentice education and told of the good work accomplished by some of the technical schools of the United States in training journeymen pressmen in the newer phases and techniques of the trade.

Lex Claybourn, President of the Claybourn Process Corporation, Milwaukee, stated printers generally were in the game of selling press hours, but that we had too many in the industry who were dissipating hours through inefficient methods of operation. When asked what would be the situation if the industry became too efficient, he replied that the workman participated only in the profits and not in the losses of the bosses.

WEDNESDAY MORNING MEETING

Frank E. Wagner, Manager of Printing Testing Department of the S. D. Warren Company, Boston, addressed the meeting on "The Relation of Paper, Type, Ink and Illustration." Mr. Wagner's address was one of the most valuable delivered at the convention. A resume will appear in an early issue of *Printing* EQUIPMENT *Engineer*.

J. Homer Winkler, on behalf of the Cleveland Club of Printing House Craftsmen addressed the delegates and invited the International Association to meet in Cleveland for its 1937 convention. He assured Craftsmen that Cleveland would make them glad they selected that city as a meeting place. The invitation was unanimously and enthusiastically accepted.

After heating J. Gus Liebenow's report on the Craftsmen's Research Commission, and various committee reports, Hon. A. E. Giegengack, upon invitation from Former President Curry installed the newly-elected international officers.

Monotype Tourist Gothic

The Lanston Monotype Machine Company announces the completion of Monotype Turist Gothic No. 140, in sizes ranging from 14, 18, 24, 30, 36, 42, 48, 60 and 72 point.

Readers of *Printing* EQUIPMENT *Engineer* may obtain a folder from the Monotype Company, in which are shown all sizes of Monotype Tourist Gothic No. 140, as well as specimen settings of advertisements in which the new face is used for display.

WILLIAM REID COMPANY, 557 So. LaSalle since 1912, will be moved to 2271 Clybourn Avenue, Chicago, phone Diversy 3766, by May 1. General repair of Linotype and Intertype parts, molds, etc., makers of Reid Magazine Racks, etc.
2271 CLYBOURN AVENUE, CHICAGO

New Equipment-Supply Company

The Superior Printers' Supply Company has been established at 118-120 North Erie St., Toledo, Ohio. The firm will carry a complete line of type, rule and strip material as well as composing room equipment with "store door" delivery over regularly scheduled routes. Messrs. Frank Korhumel and Hugh Morrison, well known to the trade, are associated with the new Company.

Patents

(Continued from Page 44)

2,047,022. METHOD FOR OBTAINING COLOR SEPARATION. Joseph S. Friedman, Newark, N. J., assignor to Omnichrome Corporation, New York, N. Y., a corporation of New York. No Drawing. Application May 9, 1935, Serial No. 20,609. 5 Claims. (Cl. 95—2.)

1. In a method of producing color separation images for photo-mechanical work, the steps of exposing a sensitized photographic element consisting of a carrier having a stratified emulsion, one stratum of which is predominantly sensitive to one region of the spectrum and the other stratum of which is predominantly sensitive to another region of the spectrum, developing the images, subjecting the emulsion to a stopbath, and thereafter printing by reflection the color record images of the respective strata to produce two color separation prints, thereafter fixing the emulsion and printing the images by transmitted light to produce a print suitable for use as a black and white or key image.

2,047,087. MATRIX AND COATING COMPOSITION THEREFOR. Raymond Szymanowitz, Hillside, N. J., assignor to Acheson Colloids Corporation, a corporation of New York. No Drawing. Application March 23, 1932, Serial No. 600,836. 5 Claims. (Cl. 134—1.)

1. Matrix coating composition consisting essentially of a suspension of colloidal graphite in water and silicate of soda as a binder for the colloidal graphite, there being present in the composition from about 1.25 to about 17.5 parts of silicate of soda and from about 25 to about 140 parts of water for each part by weight of solid colloidal graphite.

2,047,624 PRINTER'S PLATE. Abraham L. Freedlander, Dayton, Ohio, assignor to The Dayton Rubber Manufacturing Company, Dayton, Ohio, a corporation of Ohio. Application September 4, 1934, Serial No. 742,574. 12 Claims. (Cl. 41—25.)

12. In a method of manufacturing a printing plate, incorporating fibres arranged all in one substantially single direction in a layer of resilient synthetic resin, superimposing a similar layer with the filbers arranged all in another substantially single direction at right angles to the first mentioned fibers, reinforcing the plate on one side with a pre-shrunk fabric, and vulcanizing the whole together.

2,047,851. MACHINE FOR REPRODUCING PRINTING PLATES FROM PICTURES. Joseph A. Bennett, Bloomington, Ind., assignor of forty-five per cent to Joseph W. Piercy, Bloomington, Ind. Application June 25, 1932, Serial No. 619,716. Renewed September 24, 1935. 8 Claims. (Cl. 178—5.)

1. A machine for reproducing a picture by engraving upon the surface of a plate including a ram held from vertical movement but being longitudinally movable, a vertically movable engraving tool mounted upon one end of the ram, a picture support mounted upon the other end of the ram, power operated means for reciprocating the ram, the tool and the picture support, means operating upon each stroke of the ram to cause a lateral traverse of the ram whereby to engrave the plate in a series of successive parallel lines, and means for varying the vertical position of the tool with reference to the plate in consonance with variations in light and shade of the picture comprisng a dynamic armature operatively connected to the tool and including armature coils, field magnets associated with the armature coils, means for supplying a constant current to the field magnets, and means for varying the current passing through the armature coils including a light responsive element fixed with relation to the picture support, a scanning light associated with the cell and picture support and a radio amplifier amplifying the variations of current passing through the cell and transmitting the fluctuating current to the armature coils.

Printing Presses:

2,045,151. ADJUSTABLE PLATE CYLINDER FOR PRINTING PRESSES. Alexander T. Koppe, New York, N. Y. Application March 26, 1934, Serial No. 717,382. 2 Claims. (Cl. 101—248.)

2. The combination in a printing press, of a hollow plate cylinder having end walls connected by a cylindrical wall having a slot therein, a rotatable shaft having the cylinder rot

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They are also used for blowing to loosen up sheets of paper on a pile feeder, and we have strainers to prevent oil from spraying on the sheets.

The printer also uses these pumps for cooling linotype molds and for blowing dust out of the working parts of machines and out of type cases.

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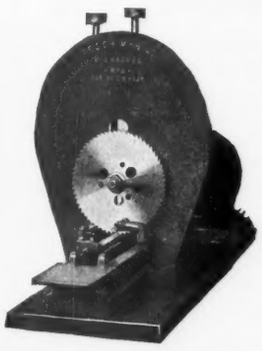

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atably mounted thereon, means for rotating the shaft, a separate split clamp located within the cylinder and embracing the shaft, a pin engaging one end of the clamp for securing it to one of the end walls, and means engaging the other end of the clamp for causing it to grip the shaft and thereby secure the cylinder in adjusted angular position on the shaft.

2,045,476. PRINTING PREPARATIONS AND A PROCESS OF PRINTING WITH SAID PREPARATIONS. Karl Krauss, Frankfort-on-the-Main-Fechenheim, and Alfred Hagenbocker, Frankfort-on-the-Main-Hochst, Germany, assignors to General Aniline Works, Inc., New York, N. Y., a corporation of Delaware. No Drawing. Application April 4, 1930, Serial No. 441,723. Renewed April 26, 1934. In Germany April 15, 1929. 5 Claims. (Cl. 8—6.)

4. Printing compositions comprising a stable reduction product of a thioindigoide dyestuff, the stable reduction product being stable to air and oxygen, difficultly soluble in alkali and yielding prints in the usual way but also with a considerably smaller quantity of a reducing agent than is required in the case of the dyestuff proper.

2,045,981. CHANGE FORM CYLINDER MOUNTING FOR ROTARY PRINTING PRESSES. William K. Eckhard, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly R. I., a corporation of Delaware. Application May 24, 1935, Serial No. 23,193. 14 Claims. (Cl. 101—247.)

14. A change form cylinder mounting comprising a side frame having an open end pocket, a cylinder shaft box slidable therein and having a shank of a predetermined length according to the diameter of the change form cylinder, an eccentric stud, rods removably connecting the eccentric stud to the box shank upon both sides of the side frame, a handle for rocking the stud to move the cylinder into and out of its operative position, and an adjustable stop for limiting the inward movement of the cylinder box.

2,046,218. TWO-COLOR ATTACHMENT FOR PRINTING PRESSES. John B Street and Otto E. Simon, Jackson Miss. Application September 30, 1935, Serial No. 42,922. 2 Claims. (Cl. 101—203.)

1. A multi-color inking attachment for printing presses having a rotary ink plate, comprising a base plate, means for securing the base plate at one end to the printing press, a pair of rollers disposed on the bottom face of the base plate and adapted to coact with the means in supporting the base plate upon and parallel with the ink plate of the printing press, a pair of discs for supplying respectively different colors of ink to the ink rollers of the press, the discs being rotatable on their axes in spaced openings formed in the base plate, ball bearings supporting the discs at their peripheries in the openings, and friction wheels supported by the base plate and bearing against the underneath surfaces of the discs, the friction wheels being adapted to engage the rotary ink plate of the press and rotate the discs.

2,046,742. INKER FOR SELF-PRINTING TICKET MACHINES. Reuben H. Helsel, Long Island City, N. Y., assignor to General Register Corporation, New York, N. Y., a corporation of Pennsylvania. Original application June 30, 1932, Serial No. 620,091. Divided and this application October 12, 1935, Serial No. 44,648. 3 Claims. (Cl. 101—351.)

1. In combination, an inking device for inking a rotary member carrying a printing element, means for guiding the inking device towards and away from the rotary member, and means for urging the inking device towards the rotary member after reaching a predetermined position short of the member, the last means including a rack on the inking device and a pivoted pinion engageable with the rack and controlled by a spring movable to either side of its pivot.

2,047,357. PRINTING. Curtis S. Crafts, Oak Park, Ill., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application September 9, 1933, Serial No. 688,741. 10 Claims. (Cl. 101—378.)

1. A printing cylinder for rotary newspaper presses including in combination a cylindrical body adapted to support a rigid printing plate, fixed plate securing means engageable with the under side of the plate near its forward end, movable plate securing means spaced apart axially of the cylinder and projecting through the surface of the cylinder so as to be engageable with the under side of the plate near its rear end and means for resiliently urging the plate securing means relatively away from each other.

2,047,364. PLATE CYLINDER FOR PRINTING PRESSES AND STEREOTYPE PLATES. Frank A. Foster, Maywood, Ill., assignor to The Goss Printing Press Company, Chicago, Ill., a corporation of Illinois. Application July 25, 1934, Serial No. 736,816. 11 Claims. (Cl. 101—378.)

1. In combination, a stereotype plate cylinder, means engaging a stereotype plate adjacent both straight ends to tension the plate about the cylinder, the means at one straight end including mechanism for positively tensioning the plate and a cooperating resilient tension-producing device for further tensioning the positively tensioned plate.

2,047,605. AUXILIARY INKING ATTACHMENT FOR PRINTING PRESSES. Otto R. Wolf, Oak Park, Ill., assignor to The Tribune Company, Chicago, Ill., a corporation of Illinois. Application August 22, 1931, Serial No. 558,714. 9 Claims. (Cl. 101—180.)

1. The combination with a newspaper printing press having a plurality of printing units with ink fountains and permanently-positioned inking mechanism for feeding ink from the fountains to the printing cylinders of the press, of an auxiliary color attachment, comprising a one-page-wide fountain and means, including a fountain roller, a scraper knife mounted to cooperate with the roller to control the ink flow thereon, and means for adjusting the knife relative to the roller, for feeding ink from the fountain to the permanently-positioned inking mechanism of the press, the color attachment being adjustable lengthwise of the press cylinders and being readily attachable to or detachable from selected press units, whereby the same may be used where needed to print a color impression on any particular page of a newspaper being printed by the press.

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☐ *Illustrated Circular No. 220*—Describes easy-rolling Floor Trucks for printing plants for interior transportation of every type of product. Has just been issued by Lewis-Shepard Co. Several new types of Caster Trucks, Rubber-Tired Trucks and Shelf Trucks are shown. Copies of this circular will be sent gladly to anyone.

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Oilgear

(*Continued from Page 14*)

The time required to increase the speed from SLOW to full speed is approximately 18 seconds. (This varies with the type of reduction used on transmission control.)

Manufacturer states some of the features of this drive are: (1) Infinitely variable speed without steps; (2) Smooth, uniform acceleration; (3) Smooth, hydraulic braking; (4) Adjustable operating torque; (5) Protection against overloads, and (6) Adjustable braking force.

On some printing presses Oilgear variable speed transmissions are used to provide automatic constant tension on the unwinder or rewinder drives. This form of drive, it is claimed, practically eliminates paper breakage which might be due to spasmodic fluctuation in tension.

For these drives there are two types of circuits, or installations. The one consists of a constant stroke pump which delivers a fixed volume of oil to the variable stroke output end of the transmission. The output or motor end is equipped with automatic pressure stroke control, designed so that as the roll diameter increases the stroke of the output end automatically increases to provide the additional torque required and decreases the drive speed so as to maintain a constant linear speed for the material being wound on the rolls.

With the other oil circuit, or installation, an adjustable tension and a fixed resistance valve are used in conjunction with a transmission having a constant or fixed stroke output end operated from either a constant or variable stroke input end. With this installation a certain amount of oil delivered by the input end is discharged through these valves which increases or decreases the pressure in the fluid power system and, hence, the amount of torque delivered by the output end to the winder roll. As the material builds up on the roll, the speed of the output end decreases in direct proportion to the increased roll diameter. Thus the amount of oil to be discharged through the valve increases, thereby increasing the pressure in the fluid power system and the torque delivered by the output end in inverse proportion to the reduction in winder speed so as to maintain a uniform tension on the material being wound.

On other printing presses the Oilgear transmissons are used for both the main drive and automatic tension rewinder. This is accomplished by using either a separate transmission drive or by using a series type of circuit in which a bracketed Oilgear constant displacement motor is driven by the fluid power in the integral transmission system.

On single and multiple color presses, 8, 12 and 20 h.p. transmissions have been used. On larger installations using separate variable delivery pumps and constant displacement motors, 35 h.p. units have been used, and on still another press, three 60 h.p. units have been used to make a combined drive of 180 h.p.

Adds Two to Sales Force

National Printing Appliance Corporation, of New York, manufacturers of the "Klean-O-Mat" Process, announces two additions to its sales force. W. P. Guild, for many years a representative of the Mergenthaler Linotype Co., and later with Miller Printing Machinery Co., has joined the mid-west force under District Manager Paul M. Nahmens. Carl T. Mason who represented Monomelt Co. for over a decade, has been made District Manager in Pennsylvania, Maryland, and West Virginia, with headquarters in Philadelphia.

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